

225 230 235 240
 Asp Pro Ala Thr Val Ala Val Lys Gly Glu Pro Val Arg Phe Leu Arg
 245 250 255
 Ser Tyr Arg Met Pro Asn Lys Pro Leu Ser Met Gly Phe Phe Gln Asn
 260 265 270
 Glu Met Tyr Val Val Cys Ala Asn Asn Arg Ile Val Arg Val Asp Leu
 275 280 285
 Arg Thr Gly Lys Glu Leu Gly Ser Tyr Ser Ser Phe Ala Gly Gly Val
 290 295 300
 Gly Leu Gly Thr Pro Gly Arg Leu Phe Phe His Asn Asp Thr Phe Tyr
 305 310 315 320
 Leu Ala Gly Arg Asn Ala Asn Ala Pro Arg Leu Ile Gln Gly Lys Val
 325 330 335
 Met Phe Val Glu Ile Ser Glu Leu Asp
 340 345

<210> 7016
 <211> 237
 <212> PRT
 <213> B.fragilis

<400> 7016

Ser Leu Met Ser Thr Asp His Ile Ser Thr His Pro Asp Ser Pro Leu
 1 5 10 15
 His Gly Asn Gly Ile Gly Ser Glu Ala Ile Asn Leu Ala Ala Ile Arg
 20 25 30
 Gln Glu Tyr Thr Lys Gly Gly Leu Lys Glu Gly Asp Leu Ser Asp Asn
 35 40 45
 Pro Leu Ser Leu Phe Asn Arg Trp Leu His Glu Ala Ile Asp Ala Gln
 50 55 60
 Val Asp Glu Pro Thr Ala Met Leu Val Gly Thr Val Ser Pro Glu Gly
 65 70 75 80
 Gln Pro Ser Thr Arg Thr Val Leu Leu Lys Asp Leu His Asp Gly Lys
 85 90 95
 Phe Ile Phe Tyr Thr Asn Tyr Glu Ser Arg Lys Gly Thr His Leu Ala
 100 105 110
 Lys Asn Pro Tyr Ile Ser Leu Ser Phe Val Trp His Ala Leu Glu Arg
 115 120 125
 Gln Val His Ile Glu Gly Ile Ala Ser Lys Val Pro Ala Gly Glu Ser
 130 135 140
 Asp Thr Tyr Phe Arg Gln Arg Pro Tyr Lys Ser Arg Ile Gly Ala Arg
 145 150 155 160
 Ile Ser Pro Gln Ser Arg Pro Leu Lys Ser Arg Met Gln Leu Ile Arg
 165 170 175
 Asn Phe Val Ala Glu Ala Ala Arg Trp Val Gly Arg Glu Val Glu Arg
 180 185 190
 Pro Ala His Trp Gly Gly Tyr Ala Val Thr Pro His Arg Ile Glu Phe
 195 200 205
 Trp Gln Gly Arg Ala Asn Arg Leu His Asp Arg Phe Leu Tyr Ser Leu
 210 215 220
 Gln Pro Asp Gly Ser Trp Gln Lys Glu Arg Leu Ala Pro
 225 230 235

<210> 7017
 <211> 406
 <212> PRT
 <213> B.fragilis

<400> 7017

Ile Ile Arg Ser Leu Phe Leu Ile Tyr Cys Leu Ile Lys Phe Ile Phe
 1 5 10 15
 Val Phe Leu Ile Pro Gln Asp Met Lys Asn Thr Phe Ile Leu Phe Leu
 20 25 30
 Val Ala Leu Ser Phe Val Cys Asn Ser Cys Asn Arg Thr Pro Ser Val
 35 40 45
 Glu Glu Pro Asp Val Leu Lys Val Glu Leu Lys Glu Thr Pro Val Ser
 50 55 60
 Val Ser Asp Phe Phe Ser Lys Val Glu Val Ile Pro Leu Glu Thr Ser
 65 70 75 80
 Asp Ser Cys Leu Leu Ala Arg Ile Leu Arg Val Arg Val Ser Gly Asp
 85 90 95
 Thr Thr Tyr Ile Leu Thr Gln Asp Tyr Pro Thr Phe Arg His Ile Thr
 100 105 110
 Leu Met Ala Phe Asp Lys Lys Gly Asn Tyr Leu Arg Ser Ile Gly Arg
 115 120 125
 Val Gly Gln Gly Pro Gly Glu Tyr Ser Gln Val Tyr Asp Ala Val Ile
 130 135 140
 Ser Glu Gln Arg Asn Arg Val Tyr Met Leu Ser Pro Phe Gly Ser Met
 145 150 155 160
 Tyr Thr Tyr Arg Leu Asp Gly Ser Phe Ile Asp Arg Lys Ile Leu Pro
 165 170 175
 Gln Lys Met Asn Phe Gln Glu Ile Gly Leu Thr Pro Asp Gly Asp Leu
 180 185 190
 Leu Thr Trp Ser Ala Gln Asn Lys Asp Asp Gly Ala Cys Ile Met Arg
 195 200 205
 Leu Asp Ala Asp Ser Ala Lys Leu Ile Asn Glu Phe Trp Ser Asp Asp
 210 215 220
 Phe Trp Leu Asn Trp Ala Cys Arg Asp Met Phe Tyr Ser Tyr Gln Gly
 225 230 235 240
 Lys Ala Tyr Phe Ala Pro Ala Phe Tyr Glu Glu Val Tyr Glu Leu Thr
 245 250 255
 Ser Asp Ser Phe Arg Val Ala Tyr Arg Trp Asp Met Gly Glu Gln Asn
 260 265 270
 Ile Asn Ile Ala Gln Tyr His Phe Asn Ser Asn Pro Asp Thr Arg Arg
 275 280 285
 Glu Glu Asp Arg Arg Leu Asn Glu Tyr Arg Glu Thr Gly Lys Ile Ala
 290 295 300
 Phe Asn Phe Thr Asn Gln Tyr Gln Asn Gly Lys Tyr Tyr Tyr Ala Gln
 305 310 315 320
 Leu Leu Ser Leu Ala Ser Lys Pro Lys Trp Lys Tyr Thr Asn Leu Phe
 325 330 335
 Tyr Arg Lys Lys Asp Gly Ala Val Phe Tyr Phe Glu Lys Thr Arg Glu
 340 345 350
 Gly Ile Arg Ile Asp Pro Glu Val Leu Thr Glu Asp Phe Met Leu Cys
 355 360 365
 Ile Val Pro Thr Glu Glu Leu Glu Asn Tyr Lys Ser Ile Leu Pro Glu
 370 375 380
 Glu Glu Tyr Arg Val Leu Ser Lys Arg Val Glu Asp Asp Asn Pro Cys
 385 390 395 400
 Val Val Lys Phe Tyr Phe
 405

<210> 7018

<211> 215

<212> PRT

<213> B.fragilis

<400> 7018

Leu Lys Met Phe Lys Tyr Leu Lys Gly Phe Trp Arg Tyr Leu Leu Arg
 1 5 10 15
 Lys Arg Val Ser Ser Leu Ser Leu Ile Asp Asp Leu Ser Thr Ile His
 20 25 30
 Pro Thr Ala Arg Val Tyr Ser Gly Cys Arg Ile Ile Gln Ser Asp Ile
 35 40 45
 Gly Ala Tyr Ser Tyr Val Gly Tyr Gly Ser Ile Leu Val Asn Val Ala
 50 55 60
 Val Gly Lys Phe Cys Ser Ile Ala Gly Asp Val Glu Ile Gly Leu Ala
 65 70 75 80
 Thr His Arg Met Asp Ala Ile Ser Thr Ser Pro Leu Phe Tyr Ser Ser
 85 90 95
 Asn Asn Ala Leu Gly Ile Ser Trp Thr Ser Tyr Ser Tyr Phe Asp Asp
 100 105 110
 Ser His Lys Pro Val Ser Ile Gly His Asp Val Trp Ile Gly Thr Arg
 115 120 125
 Val Val Ile Met Gly Gly Val Lys Ile Gly Asp Gly Ala Val Ile Gly
 130 135 140
 Ala Cys Ala Val Val Thr Arg Asp Ile Pro Pro Tyr Ala Ile Cys Val
 145 150 155 160
 Gly Ile Pro Ala Lys Val Ile Arg Tyr Arg Phe Pro Arg Glu Thr Ile
 165 170 175
 Asp Val Leu Glu His Ala Glu Trp Trp Asn Trp Ser Glu Val Leu Leu
 180 185 190
 Lys Glu Asn Ile Glu Asn Phe Asn Gly Ser Asp Thr Leu Phe Phe Asn
 195 200 205
 Arg Ile Pro Leu Lys Gln Lys
 210 215

<210> 7019

<211> 245

<212> PRT

<213> B.fragilis

<400> 7019

Ile His Pro Pro Met Ile Leu Asp Tyr Ile Tyr His Ser Gly Phe Ala
 1 5 10 15
 Ile Glu Ala Glu Gly Val Thr Leu Ile Asp Tyr Tyr Lys Asp Ser
 20 25 30
 Ser Glu Thr Glu Leu Asn Lys Gly Ile Val His Asp Arg Leu Leu Gln
 35 40 45
 Arg Pro Gly Lys Leu Tyr Val Leu Ala Ser His Phe His Pro Asp His
 50 55 60
 Phe Asn Arg Glu Val Leu Thr Trp Lys Glu Gln Arg Pro Asp Ile Ile
 65 70 75 80
 Tyr Ile Phe Ser Lys Asp Ile Leu Lys His His Arg Ala Gln Lys Glu
 85 90 95
 Asp Ala Ile Tyr Ile Asn Lys Gly Glu Glu Tyr Glu Asp Asp Met Leu
 100 105 110
 Arg Ile Gln Ala Phe Gly Ser Thr Asp Val Gly Ile Ser Phe Leu Ile
 115 120 125
 His Leu Gln Gly Lys Ser Ile Phe His Ala Gly Asp Leu Asn Asn Trp
 130 135 140
 His Trp Ser Glu Glu Ser Thr Glu Gln Glu Ile Arg Lys Ala Glu Gly
 145 150 155 160
 Asp Phe Leu Ala Glu Ile Lys Tyr Leu Gln Ala Ala Val Pro Thr Ile
 165 170 175
 Asp Leu Val Met Phe Pro Val Asp Arg Arg Met Gly Lys Asp Tyr Met
 180 185 190

Lys Gly Ala Gln Gln Phe Ile Glu Arg Ile Lys Thr Thr Ile Phe Val
 195 200 205
 Pro Met His Phe Ser Glu Asp Tyr Glu Gly Gly Asn Ala Phe Arg Ser
 210 215 220
 Ile Ala Glu Ala Gly Gly Cys Arg Phe Ile Thr Ile Thr His Arg Gly
 225 230 235 240
 Glu Ser Phe Asp Ile
 245

<210> 7020
 <211> 363
 <212> PRT
 <213> B.fragilis

<400> 7020

Ile Lys His Thr Ile Met Asn Lys Leu Thr Gln Ile Phe Leu Val Leu
 1 5 10 15
 Phe Met Ile Cys Leu Pro Val Thr Leu Trp Ala Asp Asn Asp Lys Asp
 20 25 30
 Asp Asp Asp Ser Arg Tyr Leu Ala Gly Ala Val Pro Glu Val Asp Gly
 35 40 45
 Arg Val Val Phe Ser Arg Glu Phe Ser Ile Pro Gly Met Ser Gln Asp
 50 55 60
 Glu Ile Tyr Glu Arg Met Leu Lys Trp Leu Asp Gly Arg Met Ala Gln
 65 70 75 80
 Asn Lys Asn Asn Ser Arg Val Val Tyr Lys Glu Lys Gly Val Ile Ala
 85 90 95
 Ala Ala Gly Glu Glu Trp Leu Val Phe Ser Ser Thr Ala Leu Ser Leu
 100 105 110
 Asp Arg Thr Trp Leu Thr Tyr Gln Val Thr Val Asn Cys Gln Pro Gln
 115 120 125
 Lys Cys Thr Met Glu Val Glu Lys Ile Arg Tyr Thr Tyr Arg Glu Lys
 130 135 140
 Glu Lys Tyr Ala Ala Glu Glu Trp Ile Thr Asp Lys Tyr Ala Leu Asn
 145 150 155 160
 Lys Ala Lys Thr Lys Met Val Arg Gly Leu Ala Lys Trp Arg Arg Lys
 165 170 175
 Thr Val Asn Phe Ala Asp Asn Leu Phe Glu Glu Ala Ala Lys Ala Leu
 180 185 190
 Ser Gln Lys Pro Met Glu Ala Lys Ala Glu Ala Thr Pro Lys Lys Pro
 195 200 205
 Ala Val Val Thr Ala Pro Lys Val Val Val Ile Gly Asp Asn Gln Glu
 210 215 220
 Thr Gly Lys Val Glu Lys Ala Ala Glu Leu Thr Pro Ala Ile Pro Val
 225 230 235 240
 Ile Ser Pro Ser Thr Met Pro Gly Tyr Lys Glu Val Ala Pro Asp Gln
 245 250 255
 Val Pro Ala Asn Ala Ile Gln Met Gly Ala Gly Arg Leu Val Ile Ala
 260 265 270
 Ile Gly Ser Asp Pro Phe Asn Met Thr Met Met Thr Ala Asn Ala Gly
 275 280 285
 Gly Ser Ile Gly Lys Ile Ser Gly Ser Pro Val Val Phe Ser Ile Leu
 290 295 300
 Ser Pro Asp Gln Pro Tyr Glu Gln Leu Glu Lys Ala Glu Thr Tyr Ser
 305 310 315 320
 Ile Arg Phe Tyr Pro Thr Gly Gln Lys Glu Pro Ser Val Ile Leu Glu
 325 330 335
 Cys Gln Lys Leu Pro Ala Pro Thr Pro Met Glu Gly Gln Pro Arg Thr
 340 345 350

Tyr Ala Gly Lys Ile Thr Lys Ala Phe Met Lys
 355 360

<210> 7021
 <211> 182
 <212> PRT
 <213> B.fragilis

<400> 7021
 Pro Phe Ser Thr Asp Val Met Lys Lys Thr Phe Leu Met Leu Leu Thr
 1 5 10 15
 Leu Val Leu Ser Leu Leu Thr Cys Val Ser Cys Ser Glu Glu Thr Leu
 20 25 30
 Asp Tyr Asn Asn Pro Asp Val Asp Leu Phe Val Arg Gln Leu Lys Ala
 35 40 45
 Gly Asn Tyr Asn Thr Lys Ser Pro Lys Gly Phe Val Glu Val Pro Lys
 50 55 60
 Phe Thr Glu Lys Asp Ile Pro Thr Leu Leu Asn Tyr Ala Glu Asp Leu
 65 70 75 80
 Thr Leu Ile Thr Ser Phe Pro Leu Pro Pro Val Ser Ala Tyr Tyr Ser
 85 90 95
 Gly Lys Val Arg Leu Gly Glu Cys Met Leu Trp Val Val Glu Thr Ile
 100 105 110
 Arg Leu Gly His Tyr Ala Ser Phe Gly Cys Lys Met Val Arg Ala Asn
 115 120 125
 Ala Glu Asn Tyr Glu Gly Ile Tyr Phe Leu Thr Asp Glu Glu Leu Leu
 130 135 140
 Asp Ala Ala Ala Arg Tyr Arg Arg Trp Trp Glu Asn Arg Gln Tyr Pro
 145 150 155 160
 Arg Thr Ala Trp Thr Ile Asp Ala Cys Phe Asp Glu Pro Leu Cys Gly
 165 170 175
 Ser Gly Tyr Arg Trp Trp
 180

<210> 7022
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 7022
 Asn Ala Leu Thr Met Leu Ile Glu Glu Arg Tyr Lys Asp Glu Asp Thr
 1 5 10 15
 Gly Ser Asp Gly Val Asn Ser Leu Pro Lys Leu Glu Leu Ser Tyr Ser
 20 25 30
 Ala Gly Val Cys Phe Phe Leu Ser Lys Gln Ala Lys Arg Thr Ile Ile
 35 40 45
 Asn Leu Glu Ile Lys Asn Leu Pro Pro Asn Leu Ile
 50 55 60

<210> 7023
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 7023
 Met Lys Thr Thr Leu Ile Val Val Gly Arg Thr Val Glu Gln His Tyr
 1 5 10 15
 Ile Thr Ala Ile Asn Asp Tyr Ile Glu Arg Thr Lys His Phe Ile Ser
 20 25 30

Phe Asp Met Glu Val Ile Pro Glu Leu Lys Asn Thr Lys Ser Leu Thr
 35 40 45
 Pro Glu Gln Gln Lys Glu Lys Glu Gly Glu Leu Ile Ala Lys Ala Leu
 50 55 60
 Gln Pro Gly Asp Val Val Leu Leu Asp Glu His Gly Lys Glu Met
 65 70 75 80
 Arg Ser Val Glu Phe Ala Arg Trp Met Glu Lys Lys Leu Val Asn Val
 85 90 95
 Asn Lys Arg Leu Val Phe Ile Ile Gly Gly Pro Tyr Gly Phe Ser Gln
 100 105 110
 Lys Val Tyr Asp Ala Ala His Glu Lys Ile Ser Met Ser Lys Met Thr
 115 120 125
 Phe Ser His Gln Met Ile Arg Leu Ile Phe Val Glu Gln Ile Tyr Arg
 130 135 140
 Ala Met Thr Ile Leu Asn Gly Gly Pro Tyr His His Glu
 145 150 155

<210> 7024

<211> 961

<212> PRT

<213> B.fragilis

<400> 7024

Thr Leu Pro Ala Ser Val Ala Glu Ala Tyr Ile Pro Trp Arg Arg Arg
 1 5 10 15
 Asp Ala Asn Pro Glu Gln Lys Gly Ile Ile Val Ile Asn Ala Ser Thr
 20 25 30
 Gly Lys Ala Val Asp Asn Val Leu Pro Val Glu Ile Asn Arg Glu Tyr
 35 40 45
 Gly Arg Ile Arg Phe Asp Ala Ser Gly Asn Ala Gly Asp Tyr Tyr Val
 50 55 60
 Tyr Tyr Leu Pro Tyr His Thr Ser Gly Gly Pro Tyr Pro Lys Val Asn
 65 70 75 80
 Tyr Pro Gln Gln Pro Asp Lys Ala Asp Pro Gln Trp Lys Ala Thr Cys
 85 90 95
 Lys Ala Thr Pro Ala Gly Lys Ala Val Gln Ala Lys Leu Val Arg Phe
 100 105 110
 Glu Ser Leu Gly Ser Phe Asn Ser Phe Tyr Pro Met Glu Ile Ile Ala
 115 120 125
 Thr Ala Gln Glu Lys Gln Ala Leu Ile Asp Ala Asn Ser Asn Lys Pro
 130 135 140
 Phe Leu Leu Leu Pro Glu Asp Arg Lys Tyr Pro Ile Arg Met Phe Asp
 145 150 155 160
 Asp Leu Ser Tyr Arg Gln Val Thr Gln Gly Ala Thr Gly Glu Phe Phe
 165 170 175
 Gly Glu Ala Asp Leu Asn Glu Tyr Tyr Val Leu Gln Leu Gly Leu Trp
 180 185 190
 Ala Phe Lys Asn Pro Val Asn Gly Val Lys Val Thr Phe Thr Asp Leu
 195 200 205
 Lys Gly Lys Asn Glu Ser Ile Pro Ala Ser Ala Leu Thr Cys Phe Asn
 210 215 220
 Thr Glu Gly Thr Asp Trp Leu Gly Arg Pro Ile His Pro Glu Val Asn
 225 230 235 240
 Val Gly Lys Gly Arg Val Gln Pro Leu Trp Ile Gly Ile Gln Met Pro
 245 250 255
 Glu His Ala Gly Arg Gly Ile Tyr Arg Gly Thr Val Thr Val Ser Asp
 260 265 270
 Leu Ser Gly Ala Ser Gln Glu Val Asn Ile Ala Ile Asn Leu Ser Asp
 275 280 285

[illegible]

755	760	765
Ser Ala Asn Gln Phe Asn Pro	Ala Asp Gly Tyr Ile Asn Ser Ile Phe	
770	775	780
Leu Tyr Met Glu His Met Pro	Tyr Leu Asp Arg Leu Trp Phe Gly Glu	
785	790	795
Tyr Phe Lys Tyr Glu Lys Ser Pro	Glu Tyr Trp Leu Thr Asp Val Ser	800
	810	815
Gly Ile Pro Phe Gly Met Met Ser	Glu Met Leu Gln Asp Gly Gly Asn	
	825	830
Pro Tyr Arg Gly Met Leu Tyr Gly	Met Thr Ala Arg Glu Pro Met Glu	
	840	845
Ser Ile Pro Ser Gln Leu Trp Lys	Val Trp Asp Ala Phe Gly Ile Lys	
850	855	860
Asp Ser Arg Met Met Gly Tyr Trp	Val Ser Tyr Asn Pro Val Lys Thr	
865	870	875
Gly Arg Asn Asp Ile Leu Ala Thr	Ser Phe Val Lys Asp Gly Lys Val	
	885	890
Met Ile Ala Ile Ala Ser Trp Ala	Lys Lys Asp Ser Asp Ile Lys Leu	
	900	905
Gln Ile Asp Trp Glu Lys Leu Gly	Ile Asp Ala Asp Lys Ala Arg Leu	
	915	920
Thr Ala Pro Asp Ile Lys Gly Phe	Gln Glu Gly Phe Ser Leu Ser Pro	
	930	935
Lys Asp Lys Ile Lys Val Pro Lys	Asp Lys Gly Phe Ile Phe Ile Leu	
945	950	955
Glu		960

<210> 7025
 <211> 198
 <212> PRT
 <213> B.fragilis

<400> 7025
 Thr Asn Asp Ala Asp Ile Arg Ser Ile Leu Lys Arg Gln Leu Thr Leu
 1 5 10 15
 Glu Asn Glu Ile Glu Leu Ile Lys Gly Cys Arg Ala Gly Lys Asp Ser
 20 25 30
 Ala Arg Lys Glu Leu Tyr Thr Leu Tyr Ser Arg Gln Met Leu Ala Val
 35 40 45
 Cys Phe Arg Tyr Thr Gly Asp Met Glu Ala Ala His Asp Val Leu His
 50 55 60
 Asp Gly Phe Ile Lys Ile Phe Thr Asn Phe Ser Phe Arg Gly Glu Ala
 65 70 75 80
 Ser Leu Gly Thr Trp Val Thr Arg Val Met Val Thr Gln Ala Leu Asp
 85 90 95
 Tyr Leu Arg Arg Gln Lys Arg Val Ser Gln Leu Glu Val His Glu Glu
 100 105 110
 Gln Leu Pro Asp Ile Pro Asp Leu Pro Glu Gly Gly Glu Ala Gly Arg
 115 120 125
 Ile Ser Glu Glu Gln Leu Met Lys Phe Val Ala Asp Leu Pro Asp Gly
 130 135 140
 Cys Arg Thr Val Phe Asn Leu Tyr Val Phe Glu Glu Lys Ser His Lys
 145 150 155 160
 Glu Ile Ala Asp Met Leu Gly Ile Lys Glu His Ser Ser Thr Ser Gln
 165 170 175
 Leu His Arg Ala Lys Phe Leu Leu Ala Lys Arg Ile Lys Glu Tyr Arg
 180 185 190
 Asn His Glu Glu Arg Lys

195

<210> 7026
 <211> 195
 <212> PRT
 <213> B.fragilis

<400> 7026

Lys Thr Phe Leu Asn Glu Leu Ile Phe Gln Lys Thr Arg Ile Val Met
 1 5 10 15
 Ile Glu Lys Val Phe Lys Val Gly Asp Thr Ile Thr Ile Lys Arg Thr
 20 25 30
 Ser Gln Ala Gly Thr Gly Tyr Arg Tyr Ala Leu Val Arg Leu Thr Gly
 35 40 45
 Gly Val Ala Leu Val Glu Glu Leu Ser Glu Asp Ala Asp Thr Pro Gly
 50 55 60
 Gly Thr Ser Val Gln Ser Phe Ile Phe Arg Phe Leu Gln Pro Gly Gln
 65 70 75 80
 Val Glu Ile Gln Phe Ala Tyr Tyr Arg Asp Ser Glu Glu Val Leu Tyr
 85 90 95
 Glu Asp Val Phe Ser Tyr Glu Val Val Thr Ser Glu Lys Ala Asn Pro
 100 105 110
 Ile Ile Gly Trp Gly Glu Phe Lys Pro Leu Thr Asp Gln Glu Lys
 115 120 125
 Glu Ile Phe Arg Thr Cys Met Thr Leu Lys Gly Val Asp Tyr Thr Pro
 130 135 140
 Leu Leu Val Ala Lys Gln Leu Ala Ser Gly Tyr Asn Tyr Arg Phe Ile
 145 150 155 160
 Cys Met Thr Glu Leu Leu Ile Arg Glu Pro Lys Tyr Gly Phe Ala Lys
 165 170 175
 Val Thr Ile Tyr Ala Pro Leu Arg Gly Glu Pro Ile Leu Glu Ser Ile
 180 185 190
 Ile Glu Cys
 195

<210> 7027
 <211> 161
 <212> PRT
 <213> B.fragilis

<400> 7027

Phe Gln Asn Tyr Met Asn Gln Val Gln Asn Leu Gln His Ile Ala Arg
 1 5 10 15
 Glu Leu Leu Tyr Leu Gly Met Asp Gly Ser Pro Ile Tyr Thr Asp His
 20 25 30
 Phe Arg Gln Leu Asn Thr Glu Val Phe Arg Leu Ser Glu Ala Leu Phe
 35 40 45
 Ser Met Lys Gly Ala Thr Ser Glu Glu Glu Ala Ala Ile Cys Leu Ser
 50 55 60
 Leu Leu Met Gly Tyr Asn Ala Thr Ile Tyr Asn Asp Gly Asp Lys Glu
 65 70 75 80
 Ser Lys Ile Gln Ser Ile Leu Asp Arg Ser Phe Ala Val Leu Asp His
 85 90 95
 Leu Pro Ala Ser Leu Leu Lys Cys Gln Leu Leu Thr Tyr Cys Tyr Gly
 100 105 110
 Glu Val Phe Glu Glu Asp Leu Ala Gln Glu Ala His Gln Ile Met Asp
 115 120 125
 Ser Trp Lys Asn Arg Ala Leu Ser Glu Glu Glu Leu Glu Val Met Glu
 130 135 140

Thr Leu Gln Thr Met Glu Asp Asn Arg Tyr Pro Cys Ser Glu Val Glu
 145 150 155 160
 Asp

<210> 7028
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 7028
 Thr Cys Lys Tyr Phe Glu Lys Lys Cys Phe Ile Lys Ile Val Phe Asp
 1 5 10 15
 Lys Ser Asp Ser Leu Phe Thr Phe Ala Asn Gln Leu Ile Ile Gly Lys
 20 25 30
 Tyr Glu Glu Lys Leu Phe Leu Cys Arg Trp Ser Val Ile Ala Ser Leu
 35 40 45
 Gly Tyr Gly Ser Met Phe Arg Thr Arg Lys Ser Gly
 50 55 60

<210> 7029
 <211> 112
 <212> PRT
 <213> B.fragilis

<400> 7029
 Leu Phe Cys Leu Leu Arg Val Val Val Glu Glu Lys Leu Asn Asp Met
 1 5 10 15
 Glu Thr Val Thr Asp Thr Glu Ser Ser Ser Ser Pro Asp Asp Cys Ala
 20 25 30
 Lys Thr Pro Glu Arg Leu Gly Ala Gly Leu Pro Lys Thr Gly Ser Glu
 35 40 45
 Arg Ile Gly Val Lys Ser Cys Phe Thr Thr Ser Pro Ser Arg Cys Val
 50 55 60
 Val Phe Pro Leu Thr Thr Ala Thr Trp Val Lys Ala Ser Ser Ile Ser
 65 70 75 80
 Ala Phe Gly Glu Lys Asn Gln Lys Ala Ala Asp Glu Ala Ala Asn Thr
 85 90 95
 Ser Ser Thr Glu Ala Ala Ala Ala Thr Arg Lys Lys Thr Thr Phe Arg
 100 105 110

<210> 7030
 <211> 172
 <212> PRT
 <213> B.fragilis

<400> 7030
 Met Ser Glu Gln Gln Glu Tyr Trp Phe Ala Ala Arg Thr Lys Lys Asp
 1 5 10 15
 Gln Glu Phe Ser Val Arg Asn Ala Leu Glu Lys Leu Gly Ile Glu Tyr
 20 25 30
 Phe Leu Pro Thr Gln Phe Val Ile Arg Gln Leu Lys Tyr Arg Arg Arg
 35 40 45
 Arg Val Glu Val Pro Val Ile Lys Asn Leu Ile Phe Val Arg Thr Thr
 50 55 60
 Lys Asp Arg Ala Trp Ser Ile Thr Lys Asp Asp His Val Pro Leu Tyr
 65 70 75 80
 Tyr Met Lys Asp Leu Tyr Thr His Thr Leu Leu Ile Val Pro Asn Lys
 85 90 95

Gln Met Glu Asp Phe Lys Phe Val Met Asp Leu Ala Pro Glu Asn Val
 100 105 110
 Thr Phe Asp Asp Leu Pro Leu Thr Val Gly Thr Lys Val Gln Val Val
 115 120 125
 Lys Gly Glu Phe Cys Gly Ile Glu Gly Glu Leu Ser Ser Leu Ala Asn
 130 135 140
 Arg Thr Tyr Val Val Ile Arg Ile His Gly Val Leu Ser Ala Ser Val
 145 150 155 160
 Lys Val Pro Lys Ser Tyr Leu Arg Ile Leu Ser Ala
 165 170

<210> 7031

<211> 434

<212> PRT

<213> B.fragilis

<400> 7031

Ile Ile Asn Lys Asn Lys Met Asn Met Glu Glu Ile Arg Ile Ala Val
 1 5 10 15
 Ile Gly Leu Gly Tyr Val Gly Leu Pro Leu Ala Arg Leu Phe Ser Thr
 20 25 30
 Lys Phe Lys Thr Val Gly Phe Asp Met Asn Lys Ser Arg Val Asp Ser
 35 40 45
 Ile Met Lys Gly His Asp Ala Thr Leu Glu Val Ser Asp Ser Leu Leu
 50 55 60
 Gln Asp Ala Ile Thr Asn Asn His Phe Met Cys Ser Asn Glu Leu Ser
 65 70 75 80
 Ile Ile Lys Asn Cys Asn Phe Tyr Ile Val Ala Val Pro Thr Pro Val
 85 90 95
 Asp Leu Asp Asn Arg Pro Asp Leu Arg Pro Leu Leu Ser Ala Ser Glu
 100 105 110
 Thr Val Gly Lys Val Ile Ser Lys Gly Asp Ile Val Val Tyr Glu Ser
 115 120 125
 Thr Val Tyr Pro Gly Val Thr Glu Glu Glu Cys Ile Pro Leu Ile Glu
 130 135 140
 Lys Val Ser Gly Leu Lys Phe Asn Glu Asp Phe Phe Ala Gly Tyr Ser
 145 150 155 160
 Pro Glu Arg Ile Asn Pro Gly Asp Lys Glu His Thr Val Glu Lys Ile
 165 170 175
 Ile Lys Val Thr Ser Gly Ser Thr Pro Glu Ile Ala Glu Ile Ile Asp
 180 185 190
 Arg Val Tyr Asn Lys Val Leu Val Asn Gly Thr His Lys Ala Pro Ser
 195 200 205
 Ile Lys Val Ala Glu Ala Ser Lys Ile Ile Glu Asn Ser Gln Arg Asp
 210 215 220
 Val Asn Ile Ala Phe Met Asn Glu Leu Ala Lys Ile Phe Asn Ala Met
 225 230 235 240
 Gly Ile Asp Thr Asn Asp Val Ile Ala Ala Ala Ser Ser Lys Trp Asn
 245 250 255
 Phe Ile Lys Leu Arg Pro Gly Leu Val Gly Gly His Cys Ile Ser Val
 260 265 270
 Asp Pro Tyr Tyr Leu Ile Gln Lys Ala Gln Val Tyr Gly Ile Phe Pro
 275 280 285
 Arg Ile Met Ser Ala Ala Arg Arg Leu Asn Asp Gly Met Gly Asp Tyr
 290 295 300
 Ile Ala Asn Gln Val Ile Gln Leu Met Asn Lys Lys Gly Ile Leu Val
 305 310 315 320
 Lys Asp Ala His Ile Leu Ile Leu Gly Val Thr Phe Lys Glu Asn Cys
 325 330 335

Pro Asp Ile Arg Asn Thr Lys Ile Val Asp Ile Tyr Ser Val Leu Ser
 340 345 350
 Glu Tyr Thr Ser Asn Ile Lys Val Tyr Asp Pro Trp Val Asn Gln Ser
 355 360 365
 Lys Ile Lys Glu Glu Tyr Gly Ile Asn Val Ile Asn Glu Asp Leu Lys
 370 375 380
 Asn Leu Glu Gly Lys Phe Asp Val Ile Ile Leu Gly Val Ala His Asp
 385 390 395 400
 Cys Phe Lys Asn Ile Gln Val Asn Asp Leu Leu Lys Lys Glu Tyr Gly
 405 410 415
 Val Val Tyr Asp Val Lys Gly Val Leu Asp Arg Asn Ile Val Asp Gly
 420 425 430
 Arg Leu

<210> 7032

<211> 342

<212> PRT

<213> B.fragilis

<400> 7032

Asn Val Asn Lys Lys Ile Met Ala Tyr Thr Ile Ala Phe Phe Gly Thr
 1 5 10 15
 Lys Pro Tyr Asp Glu Ala Ser Phe Asn Glu Lys Asn Lys Glu Phe Gly
 20 25 30
 Phe Glu Leu Arg Phe Phe Lys Gly His Leu Asn Arg His Asn Val Leu
 35 40 45
 Leu Thr Gln Gly Val Asp Ala Val Cys Ile Phe Val Asn Asp Thr Ala
 50 55 60
 Asp Ala Glu Val Ile Arg Thr Met Ala Thr Asn Gly Val Lys Leu Leu
 65 70 75 80
 Ala Leu Arg Cys Ala Gly Tyr Asn Asn Val Asp Leu Lys Ala Ala Ala
 85 90 95
 Glu Asn Gly Val Thr Val Val Arg Val Pro Ala Tyr Ser Pro Tyr Ala
 100 105 110
 Val Ala Glu Tyr Thr Val Ala Leu Met Leu Ser Leu Asn Arg Lys Ile
 115 120 125
 Pro Arg Ala Ser Trp Arg Thr Arg Asp Gly Asn Phe Ser Leu His Gly
 130 135 140
 Leu Leu Gly Phe Asp Met His Gly Lys Thr Ala Gly Ile Ile Gly Thr
 145 150 155 160
 Gly Lys Ile Ala Lys Ile Leu Ile His Ile Leu Lys Gly Phe Gly Met
 165 170 175
 Asn Ile Leu Ala Tyr Asp Leu Tyr Pro Asp Tyr Asn Phe Ala Arg Glu
 180 185 190
 Asn Gln Ile Val Tyr Thr Thr Leu Asp Glu Leu Tyr His Ser Ser Asp
 195 200 205
 Ile Ile Ser Leu His Cys Pro Leu Thr Glu Gln Thr Lys Tyr Leu Ile
 210 215 220
 Asn Asp Tyr Ser Ile Ser Lys Met Lys Asp Gly Val Met Ile Ile Asn
 225 230 235 240
 Thr Gly Arg Gly Gln Leu Ile His Thr Asn Ala Leu Ile Glu Gly Leu
 245 250 255
 Lys Asn Lys Lys Ile Gly Ser Ala Gly Leu Asp Val Tyr Glu Glu Glu
 260 265 270
 Ser Glu Tyr Phe Tyr Glu Asp Lys Ser Asp Arg Ile Ile Asp Asp Asp
 275 280 285
 Val Leu Ala Arg Leu Leu Ser Phe Asn Asn Val Ile Val Thr Ser His
 290 295 300

Gln Ala Phe Phe Thr Arg Glu Ala Leu Ala Asn Ile Ala Ala Thr Thr
 305 310 315 320
 Leu Glu Asn Ile Arg Asp Phe Lys Asn Gln Lys Pro Leu Val Asn Glu
 325 330 335
 Val Lys Leu Ser Asn Ala
 340

<210> 7033
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 7033
 Tyr Pro Thr Lys Arg Asn Ser Asn Asn Ile Gln Asp Lys Leu Thr Asn
 1 5 10 15
 Pro Leu Leu Arg Lys Glu Tyr Ile Thr Thr Lys Asn Gly Lys Asn Ser
 20 25 30
 Ile Lys Asp Asp Val Leu Thr Pro His Asn Ile Glu Asn Lys Lys Glu
 35 40 45
 Ala Ala Thr Ile Glu Tyr Phe Pro Tyr Leu Asn Ile Ile Ser Ala Thr
 50 55 60
 Asn Ala Ile Lys Ala Pro Ser Leu Gly Leu Glu Asn Lys Pro Phe
 65 70 75 80
 Leu Tyr Ile Lys Leu Leu Met Pro Ile Ala Ser Ser Asp Asn Phe Thr
 85 90 95
 Thr Tyr Phe Lys Leu Met Ile Ser
 100

<210> 7034
 <211> 330
 <212> PRT
 <213> B.fragilis

<400> 7034
 Lys Ile Asn Lys Gly Ile Leu Val Pro Phe Ser Lys Asn Asp Ile Thr
 1 5 10 15
 Met Asn Arg Ile Ser Ser Leu Phe Gly Ile Gln Tyr Pro Ile Ile Gln
 20 25 30
 Gly Gly Met Val Trp Cys Ser Gly Trp Lys Leu Ala Ser Ala Val Ser
 35 40 45
 Asn Ala Gly Gly Leu Gly Leu Ile Gly Ser Gly Ser Met Tyr Pro Asp
 50 55 60
 Val Leu Arg Glu His Ile Arg Lys Cys Arg Ala Ala Thr Asp Lys Pro
 65 70 75 80
 Phe Gly Val Asn Ile Pro Leu Met Tyr Pro Gln Ile Glu Glu Ile Met
 85 90 95
 Asn Ile Val Val Glu Glu Gly Val Lys Ile Val Phe Thr Ser Ala Gly
 100 105 110
 Asn Pro Lys Thr Trp Thr Gly Trp Leu Lys Glu Arg Gly Ile Thr Val
 115 120 125
 Ala His Val Val Ser Ser Ser Lys Phe Ala Met Lys Cys Glu Glu Ala
 130 135 140
 Gly Val Asp Ala Ile Val Ala Glu Gly Phe Glu Ala Gly Gly His Asn
 145 150 155 160
 Gly Arg Glu Glu Thr Thr Thr Leu Cys Leu Ile Pro Ala Val Arg Glu
 165 170 175
 Ala Thr Thr Leu Pro Leu Ile Ala Ala Gly Gly Ile Gly Thr Gly Glu
 180 185 190
 Ala Ile Phe Ala Leu Met Ala Leu Gly Ala Glu Gly Val Gln Met Gly

195	200	205
Thr Arg Phe Ala Leu	Thr Asp Glu Ser Ser Ala	Ser Asp Ile Phe Lys
210	215	220
Glu Tyr Cys Leu Arg	Leu Asn Glu Gly Asp Thr	Lys Leu Leu Leu Lys
225	230	235
Lys Leu Ala Pro Thr	Arg Leu Val Thr Asn Ser	Phe Arg Asp Arg Val
245	250	255
Glu Ala Ala Glu Gly	Arg Gly Ala Ser Glu Glu	Leu Arg Glu Leu
260	265	270
Leu Gly Arg Gly Arg	Ala Lys Lys Gly Ile Phe	Glu Gly Asp Leu Glu
275	280	285
Glu Gly Glu Leu Glu	Ile Gly Gln Val Ala Ala	Leu Phe Arg Arg Arg
290	295	300
Gln Ser Val Asp Glu	Val Met Lys Glu Leu Leu	Glu Gly Tyr Arg Arg
305	310	315
Ala Ser Asp Lys Ile	Arg Ser Ala Gly Leu	
325	330	

<210> 7035

<211> 220

<212> PRT

<213> B.fragilis

<400> 7035

Met Met Lys Asn Asp	Ser Ala Val Val	Leu Phe Ser Gly Gly	Gln Asp
1	5	10	15
Ser Thr Thr Cys Leu	Phe Trp Ala Lys Lys	His Phe Lys Lys	Val Tyr
20	25	30	
Ala Leu Ser Phe Leu	Tyr Gly Gln Lys His	Ala His Glu Val	Glu Leu
35	40	45	
Ala Arg Gly Ile Ala	Glu Arg Ala Gly Val	Glu Phe His Val	Met Asp
50	55	60	
Thr Ser Phe Ile Gly	Ser Leu Gly Ser Asn	Ser Leu Thr Asp	Thr Ser
65	70	75	80
Ile Ser Met Asp Glu	Asp Lys Pro Lys Asp	Ser Phe Pro Asn	Thr Phe
85	90	95	
Val Pro Gly Arg Asn	Leu Phe Phe Leu Ser	Ile Ala Ala Val	Phe Ala
100	105	110	
Arg Glu Gln Gly Ala	Phe His Leu Val Thr	Gly Val Ser Gln	Thr Asp
115	120	125	
Tyr Ser Gly Tyr Pro	Asp Cys Arg Asp Ser	Phe Ile Lys Ser	Leu Asn
130	135	140	
Val Thr Leu Asn Leu	Ala Met Asp Glu Gln	Phe Val Ile His	Thr Pro
145	150	155	160
Leu Met Trp Ile Asp	Lys Ala Glu Thr Trp	Ala Leu Ala Asp	Glu Leu
165	170	175	
Gly Val Phe Asp Leu	Val Arg Asn Glu Thr	Leu Thr Cys Tyr	Asn Gly
180	185	190	
Ile Pro Ala Asp Gly	Cys Gly His Cys Pro	Ala Cys Lys Leu	Arg Lys
195	200	205	
Gln Gly Leu Glu Glu	Tyr Leu Ser Lys Arg	Asn Arg	
210	215	220	

<210> 7036

<211> 386

<212> PRT

<213> B.fragilis

<400> 7036

Lys Val Lys Lys Val Lys Met Cys Cys Leu Lys Arg Arg Asn Ile Phe
 1 5 10 15
 Ile Leu Phe Gln Phe Leu Leu Ile Leu Cys Phe Ile Phe Ser Ser Ile
 20 25 30
 Gly Glu Thr Phe Tyr Ser Ser Val Asn Thr Asn Thr Gln Tyr Ile Ile
 35 40 45
 Val Leu Phe Ser Phe Tyr Tyr Leu Phe Ser Ile Leu Cys Cys Arg Gly
 50 55 60
 Val Tyr Pro Asp Gln Leu Ile Ile Leu Leu Tyr Ala Ile Leu Leu Ser
 65 70 75 80
 Phe Phe Met Thr Tyr Leu Ser Ser Arg Gly Asn Ile Asn Met Leu Lys
 85 90 95
 Ile Asn Tyr Ile Tyr Ile Tyr Pro Ile Phe Leu Gly Tyr Leu Leu Ser
 100 105 110
 Tyr Arg Phe Glu Asn Gly Phe Val Leu Arg Val Leu Gln Val Cys Leu
 115 120 125
 Ile Ala Asn Phe Leu Ala Ile Cys Tyr Glu Ile Ile Asn Leu Lys Tyr
 130 135 140
 Val Val Lys Leu Ser Glu Asp Ala Ile Gly Ile Asn Asn Leu Ile Tyr
 145 150 155 160
 Arg Asn Gly Leu Phe Ser Asn Pro Lys Glu Gly Gly Ala Phe Ile Ala
 165 170 175
 Phe Val Ala Leu Ile Met Phe Lys Tyr Gly Lys Tyr Ser Ile Val Ala
 180 185 190
 Ala Ser Phe Leu Phe Ser Ile Leu Cys Gly Val Arg Thr Ser Ser Phe
 195 200 205
 Ile Leu Phe Phe Pro Phe Leu Val Val Met Tyr Ser Phe Leu Lys Arg
 210 215 220
 Gly Leu Val Ser Leu Ser Trp Met Leu Leu Leu Phe Leu Leu Val Gly
 225 230 235 240
 Tyr Tyr Met Phe Tyr Tyr Met Ser Asp Val Ser Ser Leu Met Glu Arg
 245 250 255
 Phe Ile Asn Leu Leu Ser Thr Thr Asp Glu Gly Asn Ser Met Arg Leu
 260 265 270
 Val Phe Met Lys Lys His Val Asp Ile Cys Val Asp Asp Tyr Asn Leu
 275 280 285
 Phe Asp Tyr Leu Phe Gly Arg Phe Gly Tyr Ser Arg Asn Gln Ile Gly
 290 295 300
 Asn Gly Ala Glu Ser Ser Trp Leu Asp Leu Leu Thr Asn Val Gly Ile
 305 310 315 320
 Ser Thr Phe Leu Leu Tyr Val Ile Pro Leu Cys Gln Ile Ile Val Cys
 325 330 335
 Ser Gln Lys Trp Ile Met Lys Ile Thr Tyr Leu Val Leu Phe Val Ser
 340 345 350
 Met Gly Ile Ser Arg Phe Gly Ile Gly Ile Thr Ser Gly Val Leu Phe
 355 360 365
 Trp Leu Leu Ile Phe Gln Glu Leu Lys Glu Ser Lys Leu Ser Lys Asp
 370 375 380
 Ile Ser
 385

<210> 7037

<211> 351

<212> PRT

<213> B.fragilis

<400> 7037

Asn Ile Met Asn Arg Tyr Pro Tyr Ile Ile Ala Glu Ile Gly Gly Asn
 1 5 10 15

His Asn Gly Asp Met Glu Leu Ala Arg Glu Met Ile Lys Ser Ala Lys
 20 25 30
 Glu His Gly Ala Asp Ala Val Lys Phe Gln Leu Tyr Arg Lys Glu Asp
 35 40 45
 Leu Trp Thr Asn Asp His Leu Glu Glu Leu Asn Asn Gly Val Val Asn
 50 55 60
 Leu Glu Asn Val Ser Asn Trp Ser Thr Gln Glu Leu Gly Leu Lys Asn
 65 70 75 80
 Ile Phe Glu Gln Val Glu Lys Phe Ser Val Gln Glu Lys Asp His Ile
 85 90 95
 Val Phe Phe Asp Tyr Ala Arg Glu Phe Gly Ile Asp Tyr Ala Thr Ser
 100 105 110
 Ala Phe Thr Lys Gln Asp Ile Asp Phe Cys Ile Asp Gln Lys Val Ala
 115 120 125
 Phe Leu Lys Ile Ala Ser Cys Asp Ile Thr Asn Leu Asp Leu Ile Glu
 130 135 140
 Tyr Ala Ile Ser Lys Asp Tyr Pro Leu Leu Ile Ser Leu Gly Leu Ala
 145 150 155 160
 Asp Leu Gly Glu Ile Glu Gln Val Val Asn Leu Ile Pro Glu Lys Cys
 165 170 175
 Arg Pro Asn Ile Thr Leu Leu His Cys Val Ser Leu Tyr Pro Pro Lys
 180 185 190
 Asp Glu Ile Val Asn Leu Lys Phe Met His Thr Leu Thr Ser Thr Phe
 195 200 205
 Gly Leu Asn Val Gly Tyr Ser Asp His Thr Leu Gly Val Ser Ile Ser
 210 215 220
 Leu Ala Ala Val Ala Leu Gly Ala Lys Val Ile Glu Lys His Phe Thr
 225 230 235 240
 Leu Asp Lys Glu Met Pro Gly Trp Asp His Lys Val Ser Ala Asn Pro
 245 250 255
 Glu Glu Met Ala Val Ile Ser Arg Glu Thr Lys Arg Ile Val Asp Ser
 260 265 270
 Leu Gly Asn Gly Ile Lys Thr Ile Ser Glu Asp Glu Phe Glu Lys Arg
 275 280 285
 Lys Lys Phe Arg Arg Ser Ile Thr Thr Lys Tyr Val Leu Gln Glu Gly
 290 295 300
 His Val Ile Ser Tyr Asp Asp Ile Leu Phe Lys Arg Pro Gly Thr Gly
 305 310 315 320
 Ile Ser Ala Asn Arg Leu Lys Asp Val Ile Gly Arg Arg Val Asn His
 325 330 335
 Thr Ile Glu Ala Asp Lys Thr Leu Phe Trp Glu Asp Leu Ile Arg
 340 345 350

<210> 7038

<211> 388

<212> PRT

<213> B.fragilis

<400> 7038

Leu Tyr Met Lys Ile Val His Leu Cys Leu Ala Ser Phe Phe Val Asp
 1 5 10 15
 Asn Tyr Thr Tyr Gln Glu Asn Leu Leu Pro Lys Tyr His Lys Met Ala
 20 25 30
 Gly His Asp Val Thr Ile Ile Ala Ser Leu Val Ser Phe Ser Glu Lys
 35 40 45
 Arg Lys Pro Ile Ile Leu Pro Gly Glu Ser Ile Tyr Glu Thr Gln Glu
 50 55 60
 Gly Cys Arg Val Tyr Arg Val Asp Tyr Lys Arg Ser Phe Tyr Phe Phe
 65 70 75 80

Asn Arg Leu Leu Arg Arg Tyr Asn Lys Leu Gln Ser Leu Leu Asp Lys
 85 90 95
 Glu Arg Pro Asp Met Ile Phe Ile His Gly Val Gln Phe Ala Asn Val
 100 105 110
 Ser Ile Ile Leu Lys Tyr Lys Lys Lys Tyr Pro Ser Val Arg Ile Leu
 115 120 125
 Cys Asp Asn His Ala Asp Trp Ile Asn Ser Ala Arg Asn Leu Leu Ser
 130 135 140
 Lys Lys Ile Leu His Gly Ile Ile Trp Arg Tyr Tyr Ala Asn Lys Ile
 145 150 155 160
 Glu Pro Tyr Val Thr Arg Phe Tyr Gly Val Thr Pro Leu Arg Cys Glu
 165 170 175
 Phe Leu Lys Lys Met Tyr Asn Ile Pro Ser Ser Lys Val Ser Leu Leu
 180 185 190
 Val Met Gly Val Asp Asp Trp Gly Ile Pro Trp Glu Asn Arg Asn Ala
 195 200 205
 Ile His Met Lys Ile Arg Asn Gln Leu Asn Ile Ala Pro Ser Asp Phe
 210 215 220
 Leu Ile Ile Thr Gly Gly Lys Ile Asp Glu Arg Lys Asn Ile His Leu
 225 230 235 240
 Leu Met Glu Ala Val Leu Asn Ser Phe Glu Ser Asn Ile His Leu Val
 245 250 255
 Val Phe Gly Asn Ile Ala Pro Glu Met Lys Lys Lys Ile Asp Ser Leu
 260 265 270
 Glu Asp Asn Glu Lys Ile His Tyr Val Gly Trp Leu Ser Ser Glu Lys
 275 280 285
 Thr Ile Glu Tyr Phe Phe Ala Ser Asp Leu Ala Val Phe Pro Gly Thr
 290 295 300
 His Ser Val Leu Trp Glu Gln Ala Val Gly Ile Gly Ile Pro Ser Ile
 305 310 315 320
 Phe Lys Tyr Trp Asp Gly Met Thr His Val Asp Leu Gly Gly Asn Cys
 325 330 335
 Leu Phe Leu Phe Glu Asn Ser Ser Glu Glu Ile Ser Lys Lys Ile Ser
 340 345 350
 Ser Leu Ser Ser Arg Glu Thr Lys Tyr Leu Glu Met Lys Lys Ile Ala
 355 360 365
 Ser Cys Phe Ala His Lys Phe Tyr Tyr Ser Asp Ile Ala Lys Lys Val
 370 375 380
 Ile Glu Asp Val
 385

<210> 7039

<211> 442

<212> PRT

<213> B.fragilis

<400> 7039

Phe Asn Met Lys Asn Lys Val Asp Ile Leu Ser Phe Thr Tyr Ser Ser
 1 5 10 15
 Lys Gly Arg Asp Ile Asp Ile Val Glu Pro Val Leu Ser Lys Leu Glu
 20 25 30
 Leu Glu Leu Gly Val Ile Ile Lys Arg Cys Trp Leu Tyr Asp Asn Phe
 35 40 45
 Val Phe Asp Ile Leu Arg Tyr Lys Pro Lys Met Leu Ile Leu Ala Asn
 50 55 60
 Ala Ile Gly Cys His Tyr His Phe Trp Ala Ala Lys Phe Ala Ser Met
 65 70 75 80
 Leu Gly Ile Lys Val Val Thr Phe Val Ser Glu Gly Asp Tyr Arg Tyr
 85 90 95

Ile Asn Gly Ser Ile Thr Thr Met Leu Tyr Gly Trp Asn Lys Glu Glu
 100 105 110
 His Leu Tyr Glu Asp Leu His Leu Glu Trp Ser Gln Arg Asn Ile Asn
 115 120 125
 Tyr Phe Ser Thr Ser Pro Ser Phe Asp Glu Asn Ile Val Lys Leu Ser
 130 135 140
 Gly Ala Thr Gly Phe Asp Lys Tyr Lys Leu Leu Lys Phe Leu Asn Lys
 145 150 155 160
 Asn Asp Phe Leu Met Lys Tyr Asp Leu Gly His Tyr Glu Lys Ile Val
 165 170 175
 Gly Leu Gly Gly Trp Thr Phe Asp Phe Ala Phe Asn Glu Asn His Ser
 180 185 190
 Thr Gly Pro Ile Phe Phe Gly Lys Glu Leu Asp Gly Ile Lys Ala Ser
 195 200 205
 Leu Phe Ala Leu Arg Glu Gly Tyr Arg Ala Leu Val Thr Asn Asn Pro
 210 215 220
 Asp Ile Leu Phe Ile Cys Lys Lys His Pro Leu Thr Ile Asn Glu Tyr
 225 230 235 240
 Tyr Asp Glu Phe Ser Leu Val Arg Glu Tyr Pro Asn Val Ile Thr Leu
 245 250 255
 Gln Thr Glu Glu Asn Ile Tyr Asp Leu Ile Asn Val Ser Asp Leu Trp
 260 265 270
 Ile Thr Phe Asp Ser Thr Thr Ala Leu Glu Ala Trp Leu Leu Gly Lys
 275 280 285
 Thr Thr Leu Leu Tyr Asn Pro Val Ile Gln Asp Phe Asn Arg Ser Ser
 290 295 300
 Ile Met Lys Gly Ser Pro Ile Leu Thr Thr Pro Glu Met Leu Ile Asp
 305 310 315 320
 Ser Val Lys Glu Phe Tyr Glu Asn Asn Arg Ile Ile Asp Ala Phe Ser
 325 330 335
 Gln Lys Glu Asn Glu Arg Asn Asn Ile Ile Lys Glu Val Ile Ala Phe
 340 345 350
 Cys Asp Gly Lys Asn Tyr Leu Arg Ala Ala Asp Leu Ile Thr Ser Leu
 355 360 365
 Tyr Leu Gly Glu Lys Lys Lys Lys Glu Lys Val His Val Ala Phe Ile
 370 375 380
 Leu Lys Met Gly Gly Cys Gly Ile Arg Asn Phe Leu Arg Asn Leu Val
 385 390 395 400
 Ala Tyr Ser Asn Phe Phe Asp Val Ile Pro Arg Val Arg Arg Phe Lys
 405 410 415
 Asn Thr Arg Leu Ala Leu Tyr Asn Glu Lys Glu Arg Glu Tyr Tyr Arg
 420 425 430
 Leu Ile Tyr Lys Glu Ala Ile Thr Asn Asp
 435 440

<210> 7040

<211> 200

<212> PRT

<213> B.fragilis

<400> 7040

Glu Ser Met Lys Lys Asn Phe Phe Tyr Ala Gly Gly Leu Ser Leu Leu
 1 5 10 15
 Leu Trp Gly Met Ala Ala Cys Ser Gly Gln Gly Lys Ala Asp Lys Ala
 20 25 30
 Ala Val Val Ala Asp Ser Val Val Val Lys Thr Asp Ser Val Ala Ala
 35 40 45
 Asp Ser Thr Gly Tyr Ile Val Lys Val Gly Glu Ser Ala Pro Asp Phe
 50 55 60

Thr Ile Thr Leu Thr Asp Gly Lys Gln Met Lys Leu Ser Glu Leu Arg
 65 70 75 80
 Gly Lys Val Val Met Leu Gln Phe Thr Ala Ser Trp Cys Gly Val Cys
 85 90 95
 Arg Lys Glu Met Pro Phe Ile Glu Lys Asp Ile Trp Leu Lys His Lys
 100 105 110
 Asn Asn Pro Glu Phe Ala Leu Ile Gly Ile Asp Arg Asp Glu Pro Leu
 115 120 125
 Asp Lys Val Ile Ala Phe Gly Lys Ser Val Gly Val Thr Tyr Pro Leu
 130 135 140
 Gly Leu Asp Pro Gly Ala Asp Ile Phe Ala Lys Tyr Ala Leu Arg Glu
 145 150 155 160
 Ser Gly Ile Thr Arg Asn Val Leu Ile Asp Arg Glu Gly Lys Ile Val
 165 170 175
 Lys Leu Thr Arg Leu Tyr Asn Glu Glu Glu Phe Ala Ser Leu Val Asp
 180 185 190
 Gln Ile Asp Glu Met Leu Lys Lys
 195 200

<210> 7041

<211> 431

<212> PRT

<213> B.fragilis

<400> 7041

Leu Ile Met Lys Thr Phe Phe Arg Ser Val Ala Met Leu Leu Gly Leu
 1 5 10 15
 Gly Leu Leu Pro Leu Ala Ala His Ala Gln Lys Lys Val Ile Ile Glu
 20 25 30
 Asp Glu Glu Pro Asn Ser Val Met Phe Val Ser Thr Asn Lys Ala Gly
 35 40 45
 Asp Glu Ile Ile Arg Ile Met Asn Glu Thr Arg Leu Pro Arg Phe His
 50 55 60
 Glu Pro Lys Ala Pro Arg Phe Val Leu Thr Asp Arg Gln Gly Lys Phe
 65 70 75 80
 Ala Leu Gly Ile Gly Gly Tyr Val Arg Ala Thr Ala Glu Tyr Asp Phe
 85 90 95
 Gly Gly Ile Val Lys Asp Val Asp Phe Tyr Pro Ala Leu Ile Pro Asn
 100 105 110
 Lys Gly Ser Ala Asp Arg Ala Arg Asn Gln Phe Gln Met Asp Ile Ser
 115 120 125
 Thr Ser Thr Leu Phe Leu Lys Leu Val Gly His Thr Lys Arg Leu Gly
 130 135 140
 Asp Phe Val Val Tyr Thr Ala Ala Asn Phe Arg Gly Asp Gly Lys Thr
 145 150 155 160
 Phe Glu Leu Gln Asn Ala Tyr Ala Thr Phe Leu Gly Phe Thr Leu Gly
 165 170 175
 Tyr Ser Tyr Gly Asn Phe Met Asp Leu Ala Ala Leu Pro Pro Thr Ile
 180 185 190
 Asp Phe Ala Gly Pro Asn Gly Ser Ala Phe Tyr Arg Thr Thr Gln Leu
 195 200 205
 Ser Tyr Met Cys Asp Lys Leu Lys Asn Trp Lys Phe Gly Val Gly Val
 210 215 220
 Glu Met Pro Ser Val Asp Gly Thr Thr Asn Gln Tyr Leu Thr Ile Asn
 225 230 235 240
 Thr Gln Arg Met Pro Asp Phe Thr Ala Ser Ala Gln Tyr Asn Trp Asn
 245 250 255
 Ala Asn Ser His Leu Lys Leu Ala Ala Ile Val Arg Ser Met Thr Tyr
 260 265 270

Ser Ser Ser Val Asp Asn Lys Ala His Ser Lys Ala Gly Tyr Gly Leu
 275 280 285
 Gln Ala Ser Thr Ser Phe Asn Val Thr Pro Lys Trp Gln Val Tyr Gly
 290 295 300
 Gln Val Asn Tyr Gly Lys Gly Ile Gly Gln Tyr Leu Asn Asp Leu Ser
 305 310 315 320
 Asn Leu Asn Val Asp Ile Val Pro Asn Pro Glu Lys Glu Gly Arg Met
 325 330 335
 Gln Thr Leu Pro Met Leu Gly Trp Phe Ala Gly Leu Gln Tyr Asn Ile
 340 345 350
 Ser Lys Asn Val Phe Val Ser Gly Thr Tyr Ser Leu Ser Arg Leu Tyr
 355 360 365
 Ser Glu His Thr Tyr Pro Ser Asp Glu Pro Asp Met Tyr Arg Lys Gly
 370 375 380
 Gln Tyr Leu Val Ala Asn Leu Phe Trp Asn Val Thr Ser Asn Leu Gln
 385 390 395 400
 Val Gly Ala Glu Tyr Leu Arg Gly Trp Arg Thr Asp Phe Ser Ser Asn
 405 410 415
 Thr Arg His Ala Asn Arg Met Asn Ala Leu Val Gln Tyr Ser Phe
 420 425 430

<210> 7042

<211> 343

<212> PRT

<213> B.fragilis

<400> 7042

Tyr Glu Met Lys Asp Arg Ile Ile Leu Ser Asn Val Lys Asn Ile Lys
 1 5 10 15
 Asp Ile Ile His Ala Ile Asp Glu Tyr Gln Lys Gly Val Ile Ala Val
 20 25 30
 Val Asp Asp Asp Asn Lys Leu Ile Gly Ile Val Thr Asp Gly Asp Ile
 35 40 45
 Arg Lys Ala Ile Leu Tyr Gly Glu Leu Ser Ile Glu Lys Ile Ile Asn
 50 55 60
 Lys Arg Pro Val Thr Phe Gln Tyr Gly Ser Asn Gln Arg Ser Ile Ile
 65 70 75 80
 Asn Lys Leu Leu Glu Ile Lys Ser Ser Leu Ile Pro Leu Ile Glu Lys
 85 90 95
 Asp Gly Thr Phe Val Asp Phe Tyr Phe Leu Gly Asn Asn Tyr Lys His
 100 105 110
 Tyr Asn Ser Thr Lys Val Val Ile Met Ala Gly Gly Leu Gly Ser Arg
 115 120 125
 Leu Gly Glu Leu Thr Glu Asn Thr Pro Lys Pro Met Leu Lys Ile Gly
 130 135 140
 Gly Tyr Pro Ile Leu Glu His Ile Leu Lys Ser Phe Arg Glu Cys Gly
 145 150 155 160
 Phe Val Asp Phe Ile Phe Cys Val Asn Tyr Lys Ser Glu Val Ile Gln
 165 170 175
 Glu Tyr Phe Gln Ala Gly Glu Lys Trp Asn Val Asn Ile Glu Tyr Val
 180 185 190
 Lys Glu Asn Lys Arg Leu Gly Thr Gly Gly Ala Leu Ser Leu Leu Asn
 195 200 205
 Ala Met Val Asp Gly Asp Phe Val Ile Asn Gly Asp Val Leu Ser
 210 215 220
 Thr Leu Asn Tyr Asp Glu Phe Leu Tyr Lys His Lys Asn Asp Gln Ser
 225 230 235 240
 Val Ala Ser Met Cys Leu His Lys Met Asp Tyr Gln Ile Pro Tyr Gly
 245 250 255

116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Val Ile Lys Thr Asp Glu Lys Ser Thr Ile Val Asp Ile Val Glu Lys
 260 265 270
 Pro Thr Phe Tyr Tyr Tyr Ile Asn Thr Gly Ile Tyr Val Leu Asn Ser
 275 280 285
 Cys Val Leu Ser Tyr Ile Pro Arg Asp Thr Phe Tyr Asp Leu Pro Met
 290 295 300
 Leu Phe Lys Asp Leu Lys Glu Lys Ser Met Leu Ile Lys Gly Tyr Met
 305 310 315 320
 Thr Ser Asp Phe Trp Met Asp Ile Gly Arg Lys Glu Asp Tyr Trp Gly
 325 330 335
 Ile Lys Lys Asn Phe Glu Leu
 340

<210> 7043

<211> 281

<212> PRT

<213> B.fragilis

<400> 7043

Leu Met Lys Asn Leu Val Ala Leu Phe Thr Val Phe Tyr Ser Gly Ala
 1 5 10 15
 Glu Cys Phe Leu Lys Asp Phe Leu Ser Ser Leu Lys Glu Gln Ser Tyr
 20 25 30
 Lys Glu Phe Asp Leu Ile Ile Val Asn Asp Gly Phe Glu Val Gly Glu
 35 40 45
 Phe Glu Asn Leu Leu Cys Asn Leu Asn Val Val Glu Ile Lys Phe Ser
 50 55 60
 Ser Thr Val Ser Lys Asn Arg Glu Tyr Gly Leu Asn Tyr Ile Lys Arg
 65 70 75 80
 Ala Gly Tyr Lys Tyr Leu Ile Leu Cys Asp Val Asp Asp Phe Phe Ser
 85 90 95
 Arg Lys Arg Val Glu Ile Ser Leu Asn Met Leu Arg Glu Phe Asp Val
 100 105 110
 Val Val Asn Asp Val Asp Ile Val Ser Asn Arg Asn Glu Ile Leu Ile
 115 120 125
 Asn Asn Tyr Phe Ser Arg Ser Leu Asn Ser Ser Thr Asn Ile Asp Leu
 130 135 140
 His Phe Ile Lys Glu Lys Asn Leu Leu Gly Phe Ser Asn Thr Ala Ile
 145 150 155 160
 Lys Thr Asp Leu Phe Asp Ser Ile Asn Phe Pro Thr Asn Leu Glu Ile
 165 170 175
 Val Asp Trp Tyr Phe Phe Thr Ile Ile Leu Lys Lys Glu Pro Lys Val
 180 185 190
 Gly Phe Ile His Gln Ala Leu Thr Tyr Tyr Arg Gln His Ser Asn Asn
 195 200 205
 Leu Ile Gly Ile Gly Asp Tyr Pro Ile Glu Phe Phe Lys Lys Met Leu
 210 215 220
 Asp Leu Lys Ile Ser His Tyr Ser Tyr Leu Ser Asp Ile Asp Leu Asp
 225 230 235 240
 Tyr Lys Ser Leu Tyr Ile Gln Tyr Leu Asp Met Lys Arg Lys Ser Asp
 245 250 255
 Met Asp Ile Ile Met Gly Ile Asp Lys Asn Lys Lys Ile Asn Lys Tyr
 260 265 270
 Pro Leu Trp Trp Glu Asn Ile Lys Leu
 275 280

<210> 7044

<211> 238

<212> PRT

<213> B.fragilis

<400> 7044

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Leu Met Ile Asp Phe Phe Ile Ser Ile Leu Leu Tyr Phe Tyr Ile Leu
1          5          10          15
Leu Phe Arg Arg Gly Ile Arg Thr Ala Phe Pro Cys Leu Val Ser Pro
          20          25          30
Leu Phe Val Phe Asn Lys Thr Lys Lys Val Thr Asp Val Ser Leu Gly
          35          40          45
Lys Ser Phe Ile Gly Arg Asp Val Met Ile Ser Asp Gly Cys His Phe
          50          55          60
Tyr Asp Thr Pro Ile Val Phe Gly Lys Val Lys Ile Gly Arg Tyr Thr
65          70          75          80
Ser Ile Asn Gly Pro Gly Thr Arg Ile Cys Ala Phe Ile His Glu Ile
          85          90          95
Asn Ile Gly Ala Phe Cys Ser Ile Ala Ser Asn Val Val Ile Gln Glu
          100          105          110
Tyr Asn His Cys Val Asn His Val Thr Thr Tyr Asn Ile Tyr His His
          115          120          125
Ile Leu Asn Leu Lys Asp Ser Ile Ser Ile Ser Asn Thr Ser Lys Gly
          130          135          140
Pro Ile Thr Ile Glu Asp Asp Val Trp Ile Gly Ser Asn Val Val Ile
145          150          155          160
Leu Ser Gly Val Lys Ile Gly Arg Gly Ser Val Ile Gly Ala Gly Ala
          165          170          175
Val Val Val Asn Asp Val Pro Pro Tyr Ser Val Ala Val Gly Asn Pro
          180          185          190
Ala Arg Ile Val Lys Lys Arg Phe Asp Asp Glu Thr Ile Ser Tyr Ile
          195          200          205
Glu Lys Thr Arg Trp Trp Thr Trp Ser Ile Glu Glu Ile Lys Arg Lys
          210          215          220
Glu Asp Phe Phe Arg Lys Glu Phe Ile Lys Ser Glu Lys Gly
225          230          235

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<210> 7045

<211> 647

<212> PRT

<213> B.fragilis

<400> 7045

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Gln Ile Ile Glu His Ala Asp Gly Ile Phe Thr Val Phe Gly Gln Gln
1          5          10          15
Gln Glu Arg Leu Val Ala Val Ser Ile Asp Gln Cys Leu Leu Leu Leu
          20          25          30
Cys Cys Gly Asp Asp Phe His Arg Ile Glu Ala Val Glu Thr Ala Gln
          35          40          45
Arg Phe Glu Thr Tyr Gln Leu Gly Leu Tyr Arg Leu Ser Gly Arg Ser
          50          55          60
Gly Phe Thr Gly Cys Phe Pro Leu Arg Ile Arg Leu Ile Arg Leu Leu
65          70          75          80
Arg Ile Val Tyr Phe Arg Ile Gly Pro Ser Arg Gly Val Val Gly Glu
          85          90          95
Val Val His Ile Ile Ile Ser Gly Ile Ser Ala Cys Val Lys Ser Asp
          100          105          110
Ala Ser Val Phe Thr Val Asp Phe His Arg Lys Tyr Ile Val Tyr Arg
          115          120          125
Phe Ala Gly Arg Cys Ile Asp His Asn Asn Pro Phe Leu Phe Gly Ile
          130          135          140
Gly Val Thr Ser Ala Pro Gly Asp Ile Ser Phe Arg Tyr Gly Gly Gly

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145		150		155		160
Glu Cys Ser Arg Asn Asn Gly Ala Met Val Pro Gln Cys Val Gly Cys						
		165		170		175
Pro Val Val Phe Ala Val Lys Arg Gly Phe Gly Gly Arg Ser Leu Glu						
		180		185		190
Ser Leu Pro Glu Gly Leu Thr Ser Leu Thr Val Pro Ile Lys Glu Phe						
		195		200		205
Leu His Asn Val Tyr Leu Ile Thr Met Cys Lys Phe Thr Lys Asn His						
		210		215		220
Leu Trp Ile Trp Gln Ile Gly Arg Phe Phe Ile Ile Asn Arg Phe Cys						
225		230		235		240
Pro Lys Ala Cys Val Val Ile Gly Tyr Ala Ile Ser Asp Val Ser Leu						
		245		250		255
Arg Leu Ser Gly Arg Ile Phe Leu Trp Glu Lys Tyr Phe Leu Tyr Tyr						
		260		265		270
Leu Cys Ala Leu Lys Met Asn Lys Pro Tyr Thr Met Asn Arg Lys Gln						
		275		280		285
Ile Leu Cys Ile Ser Leu Leu Ala Phe Ser Leu Cys Ala Cys Gln Asp						
		290		295		300
Asp Asp Thr Ala Asp Ile Leu Asp Ala Phe Gly Thr Pro Pro Ala Leu						
305		310		315		320
Thr Lys Met Thr Ala Gln Glu Phe Leu Asp Gln Gly Glu Gln Met Phe						
		325		330		335
Glu Asp Gly Glu Ser Val Asp Glu Ile Val Ser Ala Asp Arg Ala Phe						
		340		345		350
Tyr Val Asn Asn Pro Phe Asn Val Ser Met Ala Asp Gly Lys Leu Arg						
		355		360		365
Leu Phe Asn Gly Met Ala His Asp Phe Lys Glu Val Ser Leu Trp Leu						
		370		375		380
Thr Met Pro His Leu Arg Asp Thr Ile Gln Leu Met Gln Phe Glu Glu						
385		390		395		400
Val Pro Gly Phe Tyr Asn Ile Lys Leu Asp Ser Pro Leu Lys Met Gly						
		405		410		415
Glu Val Val Tyr Ala Ser Lys Ser Gly Lys Pro Val Arg Val Asn Asn						
		420		425		430
Leu Ala Leu Leu Ser Pro Asp Gln Tyr Glu Leu Leu Leu Ser Cys Asn						
		435		440		445
Asp Ser Val Phe Asp Met Leu Lys Thr Ile Lys Met Lys Thr Arg Ile						
		450		455		460
Gln Met Gly Lys Tyr Gly Ser Gly Asn Trp Gly Val Met Thr Ala Asn						
465		470		475		480
Ala Ala Arg Tyr Tyr Ala Thr Ser Ala Val Asn Met Ala Val Met Phe						
		485		490		495
Ser Ser Glu Ile Phe Arg Asp Ser Leu Met Asn Tyr Lys Gly Ser Ile						
		500		505		510
His Asn Asp Ala Gly Lys Glu Ile Asp Arg Glu Gly Leu Leu Asn Ser						
		515		520		525
Ile Leu Asn Lys Gln Ser Leu Val Phe Gly Val Val Thr Gly Ser Gly						
		530		535		540
Ile Ala Gly Leu Gly Gly Gly Asn Ala Leu Gly Leu Arg Glu Glu Tyr						
545		550		555		560
Leu Ala Gly Phe Phe Tyr Gln Asn Arg Val Ala Ile Asp Cys Asn Trp						
		565		570		575
Val Leu His Val Trp Ile His Glu Leu Gly His Cys Leu Gly Tyr Gly						
		580		585		590
His Ser Ser Ser Leu Cys Tyr Gly Ser Val Pro Asp Glu Ile Val Pro						
		595		600		605
Lys Val Tyr Arg Tyr Met Met Lys His Arg Met Leu Pro Tyr Ile Ile						
		610		615		620

145 150 155 160
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555 560
 565 570 575
 580 585 590
 595 600 605
 610 615 620

Asn Pro Phe Lys Ser Tyr Asn Asp Tyr Asn Pro Gly Ile Asn Asp Ala
 625 630 635 640
 Asp Asn Pro Asp Ile Glu Leu
 645

<210> 7046
 <211> 152
 <212> PRT
 <213> B.fragilis

<400> 7046
 Ile Met Thr Glu Leu Lys Glu Gln Leu Ser Leu Leu Gly Arg Lys Thr
 1 5 10 15
 Glu Tyr Lys Gln Asp Tyr Ala Pro Glu Val Leu Glu Ala Phe Asp Asn
 20 25 30
 Lys His Pro Glu Asn Asp Tyr Trp Val Arg Phe Asn Cys Pro Glu Phe
 35 40 45
 Thr Ser Leu Cys Pro Ile Thr Gly Gln Pro Asp Phe Ala Glu Ile Arg
 50 55 60
 Ile Ser Tyr Leu Pro Asp Val Lys Met Val Glu Ser Lys Ser Leu Lys
 65 70 75 80
 Leu Tyr Leu Phe Ser Phe Arg Asn His Gly Ala Phe His Glu Asp Cys
 85 90 95
 Val Asn Ile Ile Met Lys Asp Leu Ile Arg Leu Met Asp Pro Lys Tyr
 100 105 110
 Ile Glu Val Thr Gly Ile Phe Thr Pro Arg Gly Gly Ile Ser Ile Tyr
 115 120 125
 Pro Tyr Ala Asn Tyr Gly Arg Pro Gly Thr Lys Tyr Glu Glu Met Ala
 130 135 140
 Thr His Arg Leu Met Asn His Glu
 145 150

<210> 7047
 <211> 167
 <212> PRT
 <213> B.fragilis

<400> 7047
 Phe Leu Gly Glu Leu Thr Gly Asn Ser Ser Ser Asn Lys Gln Glu Tyr
 1 5 10 15
 Gln Leu Leu Lys Asp Asn Leu Val Arg Ser Tyr Asn Lys Ala Leu Lys
 20 25 30
 Lys Asn Ala Pro Tyr Ser Ile Phe Ala Ile Lys Asn Gly Pro Lys Ser
 35 40 45
 His Ile Gly Arg His Leu Met Thr Ser Phe Leu Ser Met Lys Gly Leu
 50 55 60
 Thr Glu Leu Thr Asn Val Val Gly Asn Trp Ser Asp Lys Arg Ala Ser
 65 70 75 80
 Ala Val Ala Arg Thr Thr Tyr Thr His Gln Ile Thr Ala Ile Pro Asp
 85 90 95
 His Tyr Phe Ala Leu Val Ser Arg Tyr Tyr Ala Tyr Asp Pro Ile Ser
 100 105 110
 Lys Glu Met Ile Ala Leu Lys Asp Glu Thr Asn Pro Ile Glu Glu Trp
 115 120 125
 Gln His Ile Glu Gln Leu Lys Gly Ser Ala Glu Gly Ser Ile Arg Tyr
 130 135 140
 Pro Ala Trp Asn Gly Ile Ile Ser Gln Glu Val Leu Asp Tyr Leu Ser
 145 150 155 160
 Ser Tyr Ile Asn Arg Arg Ile

165

<210> 7048
 <211> 167
 <212> PRT
 <213> B.fragilis

<400> 7048

Phe	Leu	Gly	Glu	Leu	Thr	Gly	Asn	Ser	Ser	Ser	Asn	Lys	Gln	Glu	Tyr
1				5					10					15	
Gln	Leu	Leu	Lys	Asp	Asn	Leu	Val	Arg	Ser	Tyr	Asn	Lys	Ala	Leu	Lys
			20					25					30		
Lys	Asn	Ala	Pro	Tyr	Ser	Ile	Phe	Ala	Ile	Lys	Asn	Gly	Pro	Lys	Ser
		35					40					45			
His	Ile	Gly	Arg	His	Leu	Met	Thr	Ser	Phe	Leu	Ser	Met	Lys	Gly	Leu
	50					55					60				
Thr	Glu	Leu	Thr	Asn	Val	Val	Gly	Asn	Trp	Ser	Asp	Lys	Arg	Ala	Ser
65					70					75					80
Ala	Val	Ala	Arg	Thr	Thr	Tyr	Thr	His	Gln	Ile	Thr	Ala	Ile	Pro	Asp
				85					90					95	
His	Tyr	Phe	Ala	Leu	Val	Ser	Arg	Tyr	Tyr	Ala	Tyr	Asp	Pro	Ile	Ser
			100					105					110		
Lys	Glu	Met	Ile	Ala	Leu	Lys	Asp	Glu	Thr	Asn	Pro	Ile	Glu	Glu	Trp
		115					120					125			
Gln	His	Ile	Glu	Gln	Leu	Lys	Gly	Ser	Ala	Glu	Gly	Ser	Ile	Arg	Tyr
	130					135						140			
Pro	Ala	Trp	Asn	Gly	Ile	Ile	Ser	Gln	Glu	Val	Leu	Asp	Tyr	Leu	Ser
145					150					155					160
Ser	Tyr	Ile	Asn	Arg	Arg	Ile									
					165										

<210> 7049
 <211> 433
 <212> PRT
 <213> B.fragilis

<400> 7049

Met	Phe	Asn	Trp	Thr	Tyr	Leu	Asp	Gly	Leu	Ser	Asn	Tyr	Asn	Ile	Ile
1				5					10					15	
Ser	Arg	Tyr	Ser	Phe	Asn	Ile	Ile	Asn	Phe	Met	Lys	Ile	Pro	Phe	Ser
			20					25					30		
Pro	Pro	Tyr	Ile	Asp	Glu	Ala	Val	Ile	Asn	Glu	Val	Val	Asp	Ser	Leu
		35					40					45			
Arg	Ser	Gly	Trp	Ile	Thr	Ser	Gly	Pro	Lys	Val	Lys	Ala	Leu	Glu	Glu
	50					55					60				
Glu	Ile	Lys	Ser	Phe	Ser	Gly	Ala	Lys	Glu	Val	Leu	Cys	Val	Asn	Ser
65					70					75					80
Trp	Thr	Ser	Gly	Ala	Ile	Met	Met	Leu	Arg	Trp	Leu	Gly	Val	Lys	Glu
			85					90						95	
Gly	Asp	Glu	Val	Ile	Val	Pro	Ala	Tyr	Thr	Tyr	Ser	Ala	Thr	Ala	Leu
			100					105					110		
Ala	Val	Leu	His	Ala	Gly	Ala	Lys	Pro	Val	Met	Val	Asp	Ser	Gly	Thr
		115					120					125			
Asp	Phe	Asn	Ile	Ser	Val	Glu	Ala	Val	Arg	Lys	Ala	Ile	Thr	Pro	Lys
	130					135					140				
Thr	Lys	Ala	Ile	Ile	Pro	Val	Asp	Ile	Ala	Gly	Phe	Pro	Cys	Asp	Tyr
145					150					155					160
Glu	Arg	Ile	Met	Ala	Leu	Val	Gln	Glu	Pro	Glu	Met	Val	Lys	Leu	Phe
				165					170					175	

Arg Ser Glu Ser Pro Val Gln Glu Lys Leu Gly Arg Ile Leu Val Met
 180 185 190
 Asn Asp Ala Ala His Ser Leu Gly Ala Arg Tyr Ser Asn Arg Gln Arg
 195 200 205
 Thr Gly Cys Glu Thr Asp Val Ala Ile Phe Ser Leu His Ala Val Lys
 210 215 220
 Asn Val Thr Thr Ala Glu Gly Gly Ala Ile Cys Leu Asn Leu Pro Lys
 225 230 235 240
 Pro Phe Asp Asn Thr Glu Leu Tyr Lys Glu Leu Arg Met Thr Ser Leu
 245 250 255
 Asn Cys Gln Thr Lys Asp Ala Phe Ser Lys Ser Lys Ala Gly Gly Trp
 260 265 270
 Arg Tyr Asp Ile Val Gly Phe Gly Met Lys Ile Asn Met Ala Asp Val
 275 280 285
 Asn Ala Ala Ile Gly Leu Ala Gln Ile Arg Glu Tyr Pro Glu Leu Leu
 290 295 300
 Lys Glu Arg Lys Arg Val Phe Asn Ala Tyr Ser Asp Ala Phe Ser Ala
 305 310 315 320
 Cys Asp Trp Ala Ile Val Pro Pro Ser Val Asp Gly Glu Lys Glu Ser
 325 330 335
 Ser Tyr His Ile Tyr Ala Leu Arg Ile Lys Asp Phe Thr Glu Glu Gln
 340 345 350
 Arg Asp Arg Met Ile Asp Glu Ile Ala Lys Ser Glu Val Ala Val Asn
 355 360 365
 Val His Phe Ile Pro Met Pro Met Leu Ser Phe Phe Lys Ser Met Gly
 370 375 380
 Tyr Asp Ile Lys Asp Tyr Pro Gln Ala Tyr Gln Asn Phe Lys Ser Glu
 385 390 395 400
 Ile Ser Leu Pro Ile Tyr Pro Gln Leu Asp Ser Glu Lys Leu Asn Phe
 405 410 415
 Ile Ile Glu Thr Val Lys Ala Ala Tyr Ala Thr Val Ile Ala Glu Asn
 420 425 430
 Arg

<210> 7050
 <211> 481
 <212> PRT
 <213> B.fragilis

<400> 7050
 Phe Ile Asp Cys Met Tyr Lys Lys Gln Ser Phe Trp Ser Asn Ile Ile
 1 5 10 15
 Lys Gln Ser Ser Trp Tyr Tyr Leu Cys Ser Ala Leu Asn Asn Gly Leu
 20 25 30
 Ala Ile Leu Leu Leu Pro Phe Leu Ser Arg Arg Leu Ser Thr Glu Glu
 35 40 45
 Tyr Gly Ile Ile Gln Leu Ser Thr Gly Ile Gly Leu Phe Leu Pro Met
 50 55 60
 Val Phe Ser Cys Gly Ile Asp Arg Ala Ile Tyr Arg Phe Phe Asn Glu
 65 70 75 80
 Cys Arg Thr His Lys Ala Lys Lys Glu Leu Ile Ser Thr Val Tyr Trp
 85 90 95
 Phe Val Val Ile Val Gly Met Val Phe Leu Thr Ile Phe Val Leu Ser
 100 105 110
 Ser Ser Leu Trp Phe Lys Ser Val Val His Ile Ser Pro Tyr Pro Tyr
 115 120 125
 Val Leu Leu Phe Ala Tyr Pro Tyr Leu Phe Ala Glu Leu Ser Thr Ile
 130 135 140

Gly Gln Ser Tyr Phe Gln Gln Val Phe Asp Leu Lys Arg Met Thr Ile
 145 150 155 160
 Ile Glu Val Ile Gly Thr Ala Ile Asn Leu Leu Leu Ser Ile Tyr Phe
 165 170 175
 Val Val Thr Trp Asp Asp Gly Ala Leu Ala Arg Leu Val Ala Ile Thr
 180 185 190
 Ile Ser Phe Phe Phe Lys Ser Ser Ile Tyr Ser Tyr Tyr Leu Leu Lys
 195 200 205
 Arg Asn Leu Leu Val Phe Arg Cys Asn Tyr Ile Lys Val Trp Glu Tyr
 210 215 220
 Val Lys Phe Ser Leu Pro Leu Leu Pro Asn Ser Ile Ser Leu Trp Leu
 225 230 235 240
 Ser Arg Thr Phe Asp Arg Ile Leu Ile Ser Tyr Tyr Cys Gly Thr Ala
 245 250 255
 Ile Ala Gly Val Tyr Ser Thr Ala Val Gln Val Ser Phe Val Leu Tyr
 260 265 270
 Phe Ile Gln Asp Ser Val Thr Gln Ala Phe Gly Pro Met Gln Ile Arg
 275 280 285
 Leu Phe Ile Gln Asn Lys Val Glu Ala Val Arg Cys Leu Lys Ile Met
 290 295 300
 Ser Lys Ile Phe Tyr Ile Ile Met Leu Val Ser Val Val Phe Leu Ser
 305 310 315 320
 Ser Phe Cys Lys Glu Ile Met Asn Phe Val Leu Asp Glu Lys Phe Val
 325 330 335
 Pro Pro Val Ile Val Val Ala Leu Leu Ser Ser Val Tyr Ile Tyr Gln
 340 345 350
 Ala Gln Tyr Arg Leu Phe Ser Asp Ile Leu Ile Tyr His Lys Lys Asn
 355 360 365
 Lys Tyr Phe Met Tyr Ala Gly Ile Ile Gln Ala Val Ile Ser Leu Leu
 370 375 380
 Ile Asn Ile Val Phe Ile Pro Lys Tyr Gly Tyr Val Val Ala Gly Trp
 385 390 395 400
 Ser Ser Leu Ile Ala Val Met Leu Tyr Thr Leu Ile Ile Ala Tyr Tyr
 405 410 415
 Ser Val Lys Ile Glu Asn Leu Ser Leu Asp Tyr Ser Phe Tyr Ile Lys
 420 425 430
 Tyr Thr Leu Ile Leu Met Leu Ala Leu Phe Leu Leu Leu Asn Pro Leu
 435 440 445
 Phe Asn Met Asp Met His Ile Leu Leu Lys Leu Leu Val Ser Gly
 450 455 460
 Ile Leu Val Phe Gly Val Arg Asp Val Phe Lys Leu Lys Lys Asn Ile
 465 470 475 480
 Val

<210> 7051

<211> 246

<212> PRT

<213> B.fragilis

<400> 7051

Phe Leu Met Cys Glu Leu Gly Tyr Phe Ile Ser Ser Tyr Arg Leu Ser
 1 5 10 15
 Pro Tyr Lys Phe Arg Phe Phe Pro Ile Ser Asn Tyr Arg Ile His Arg
 20 25 30
 Ser Gly Met Ile Phe Leu Leu Tyr Phe Cys Cys Lys Pro Lys Lys Asn
 35 40 45
 Ile Met Lys Lys Ile Leu Phe Ile Leu Phe Thr Val Gln Phe Ile Leu
 50 55 60

Ile Pro Arg Ile Thr Gly Ser Tyr Gly Ala Asn Ser Ile Gly Asn Asn
 65 70 75 80
 His Gly His Ser Val Thr Asn Gln Gly Lys Lys Thr Ile Lys Lys Asp
 85 90 95
 Ile Phe Gly Asp Thr Val Ile Glu Asp Asn His Gly Asn Arg Lys Thr
 100 105 110
 Ile Lys Lys Asp Ile Phe Gly Asp Thr Val Ile Glu Asp Asn Arg Gly
 115 120 125
 Asn Arg Lys Thr Ile Lys Lys Asp Ile Phe Gly Asp Thr Val Ile Glu
 130 135 140
 Asp Asn Arg Gly Asn Arg Lys Thr Ile Lys Lys Asp Ile Phe Gly Asp
 145 150 155 160
 Thr Val Ile Glu Asn Asn Cys Gly Asn Arg Lys Thr Ile Lys Lys Asp
 165 170 175
 Ile Phe Gly Asp Thr Val Ile Glu Asp Asn Arg Gly Asn Arg Lys Ser
 180 185 190
 Ile Lys Lys Asp Ile Phe Gly Asn Thr Val Ile Glu Asn Asn Lys Gly
 195 200 205
 Tyr Lys Lys Thr Ile Lys Thr Asp Ile Phe Gly Asn Lys Ile Ile Glu
 210 215 220
 Asp Asn His Gly Lys Lys Gln Ile Ile Lys Lys Asp Ile Phe Gly Asn
 225 230 235 240
 Val Ile Ile Glu Asn Tyr
 245

<210> 7052
 <211> 236
 <212> PRT
 <213> B.fragilis

<400> 7052
 Asn Phe Ile Leu Gly Gly Phe Asp Lys Met Ile Ala Ile Ile Pro Ala
 1 5 10 15
 Arg Gly Gly Ser Lys Gly Leu Pro Gly Lys Asn Ile Arg Lys Met Cys
 20 25 30
 Gly Lys Pro Leu Ile Ala Tyr Thr Ile Glu Cys Ala Leu Lys Ser Lys
 35 40 45
 Tyr Ile Asp Arg Val Ile Val Ser Thr Asp Asp Asp Glu Ile Ala Arg
 50 55 60
 Ile Ser Leu Lys Phe Gly Ala Glu Val Pro Phe Met Arg Pro Ser His
 65 70 75 80
 Leu Ala Ser Asp Thr Val Leu Ala Val Glu Asn Tyr Leu Tyr Thr Ile
 85 90 95
 Asp Arg Ile Glu Lys Glu Glu Asn Val Ile Ile Asp Arg Phe Ile Val
 100 105 110
 Leu Gln Pro Thr Ser Pro Leu Arg Ser Val Glu Asp Ile Asp Cys Ala
 115 120 125
 Val Glu Leu Phe Lys Lys Lys Asn Ala Asp Ser Val Val Ser Tyr Thr
 130 135 140
 Lys Glu Glu His Pro Ile Tyr Trp His Lys Asn Ile Asp Asn Asp Asn
 145 150 155 160
 Arg Leu Ile Asn Ile Phe Asp Asp Lys Ile Val Asn Arg Gln Glu Leu
 165 170 175
 Arg Thr Thr Tyr Tyr Pro Asn Gly Ala Ile Tyr Ile Phe Lys Ser Ser
 180 185 190
 Leu Ile Arg Asn Lys Lys Tyr Tyr Thr Asp Asn Ser Phe Ala Tyr Val
 195 200 205
 Met Pro Arg Asp Arg Ser Val Asp Ile Asp Phe Leu Glu Asp Phe Leu
 210 215 220

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<210> 7053
<211> 62
<212> PRT
<213> B.fragilis
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Gly	Ile	Ile	Leu	Leu	Cys	Met	Ser	His	Ser	Tyr	Asn	Ser	Leu	Tyr	Asn
1				5					10					15	
Tyr	Leu	Cys	Leu	Leu	Tyr	Ser	Gln	Pro	Thr	Tyr	Glu	Asp	Lys	Lys	Asp
			20					25					30		
Lys	Gln	Lys	Ile	Phe	Arg	Leu	Tyr	Asn	Asp	Leu	Phe	Ser	Glu	Gln	Lys
		35					40					45			
Glu	Tyr	Pro	Asn	Ala	Tyr	Pro	Cys	Ala	Ile	Met	Gly	Asp	Gly		
	50					55					60				

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<210> 7054
<211> 272
<212> PRT
<213> B.fragilis
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Lys 1	Ala	Ile	Arg	Ser 5	Ser	Tyr	Asn	Lys	Tyr 10	Gln	Ala	Phe	Val	Asp 15	Val
Tyr	Gln	Leu	Phe 20	Leu	His	Pro	Ala	Gly 25	Lys	Leu	His	Arg	Pro 30	His	Leu
Phe	Ser	Val	Phe 35	Val	Gln	Gln	His 40	Asn	His	Val	Ser	Arg 45	Leu	Lys	Gly
Phe 50	Gly	Tyr	Gln	Phe	Ala	Phe	Leu 55	Leu	Phe	Leu	Leu	Leu 60	Gly	Cys	Gln
Ala 65	Phe	Arg	Ile	Phe 70	Gln	Phe	Trp	Asn	His 75	Leu	His	Ile	Glu 80	Arg	Asn
Glu	Val	Phe	Gly	Thr 85	Leu	Tyr	Val	Ile 90	Val	Asp	Cys	Ser	Asp 95	Ile	Met
Leu	Leu	Tyr	Ser 100	Pro	Ser	Tyr	Asp	Asp 105	Lys	Gly	Cys	Phe 110	His	Ser	Ser
Ala	Asn	Ser 115	Cys	Leu	Leu	His	Lys 120	Asn	Lys	Lys	Lys	Ile 125	Leu	Phe	Leu
Ala 130	Leu	Asn	Thr	Tyr	Leu	Cys 135	Val	Ser	Ile	Ile	Leu	Val 140	Ile	Met	Lys
Lys 145	Arg	Val	Leu	Leu	Trp	Met 150	Ala	Gly	Leu	Val	Phe	Ala 155	Val	Thr	Ser
Leu	Phe	Ala	Gln	Asp 165	Ile	Pro	Val	Gly	Val 170	Val	Val	Ala 175	Phe	Lys	Lys
Gly	Asn	Ser	Gln 180	Glu	Leu	Asn	Arg 185	Tyr	Leu	Gly	Glu	Lys 190	Val	Asn	Leu
Val	Ile	Gln 195	Asn	Arg	Ser	Glu 200	Ser	Val	Asp	Arg	Gln	Ala 205	Ala	Glu	Gly
Thr	Leu 210	Ala	Ala	Phe	Phe	Ser 215	Ser	Asn	Lys	Val	Ser	Gly 220	Phe	Asn	Val
Asn 225	His	Glu	Gly	Lys	Arg	Asp 230	Glu	Ser	Ser	Phe	Ile	Ile 235	Gly	Thr	Leu
Thr	Thr	Ala	Asn 245	Gly	Asn	Phe	Arg	Ile	Asn 250	Cys	Phe	Phe 255	Arg	Arg	Val
Gln	Asn	Lys	Tyr 260	Leu	Ile	Asn	Gln 265	Ile	Arg	Ile	Asp	Lys 270	Thr	Asn	Glu

<210> 7055
 <211> 172
 <212> PRT
 <213> B.fragilis

<400> 7055

Lys	Gly	Lys	Arg	Ala	Met	Glu	Lys	Met	Asn	Ile	Thr	His	Lys	Ile	Val
1				5					10					15	
Ala	Met	Gln	Pro	Glu	Leu	Glu	His	Phe	Ala	Tyr	Lys	Leu	Thr	Ala	Asp
			20					25					30		
Arg	Glu	Ser	Ala	Asn	Asp	Leu	Val	Gln	Asp	Cys	Leu	Leu	Lys	Ala	Leu
		35					40					45			
Asp	Asn	Lys	Glu	Lys	Phe	Val	His	Thr	Gln	Asn	Phe	Lys	Gly	Trp	Met
	50					55					60				
Tyr	Thr	Ile	Met	Arg	Asn	Ile	Phe	Ile	Asn	Asn	Tyr	Arg	Lys	Ser	Leu
65					70					75				80	
Arg	Glu	Val	Asp	Met	Thr	Asp	Ser	Thr	Tyr	Asn	Leu	Tyr	Ala	Gln	Thr
				85					90					95	
Met	Thr	Glu	Gly	Glu	Glu	Gly	Asn	Arg	Phe	Glu	Thr	Ile	Tyr	Asp	Leu
			100					105						110	
Lys	Glu	Leu	Tyr	Lys	Val	Ile	Asn	Ala	Val	Pro	Glu	Asp	Leu	Lys	Lys
		115					120					125			
Pro	Phe	Met	Met	Phe	Val	Ala	Gly	Phe	Lys	Tyr	Arg	Glu	Ile	Ala	Glu
	130					135					140				
Lys	Met	Asp	Leu	Pro	Val	Gly	Thr	Ile	Lys	Ser	Arg	Leu	Phe	Leu	Ile
145					150					155					160
Arg	Lys	Arg	Leu	Gln	Gln	Asp	Leu	Lys	Asp	Phe	Ser				
				165					170						

<210> 7056
 <211> 352
 <212> PRT
 <213> B.fragilis

<400> 7056

Arg	Phe	Lys	Arg	Arg	Lys	Leu	Ser	Val	Ser	Ser	Val	Val	Arg	Lys	Gln
1				5					10					15	
Ser	Ser	Met	Asn	Leu	Lys	Phe	Leu	Tyr	Leu	Leu	Leu	Leu	Ile	Ser	Ala
			20					25					30		
Leu	Cys	Ile	Ser	Cys	Ser	Lys	Asp	Glu	Glu	Pro	Ser	Asp	Lys	Gly	Ser
		35					40					45			
Thr	Ser	Pro	Gln	Glu	Pro	Val	Tyr	Thr	Thr	Phe	Thr	Asp	Ala	Gly	Glu
	50					55					60				
Val	Val	Val	Pro	Gly	Val	Leu	Pro	Ala	Asn	Phe	Thr	Pro	Arg	Ser	Val
65					70					75				80	
Arg	Val	Lys	Gly	Asp	Thr	Leu	Phe	Val	Ala	Asn	Thr	Asn	Ala	Ala	Asp
				85					90					95	
Arg	Ser	Val	Leu	Leu	Leu	Asn	Leu	Thr	Thr	Gly	Glu	Leu	Ile	Gly	Arg
			100					105					110		
Ile	Asp	Ser	Trp	Val	Arg	Lys	Gly	Val	Lys	Glu	Thr	Phe	Asn	Ala	Glu
		115					120					125			
Ile	Gly	Asp	Met	Ala	Val	Ser	Asp	Arg	Tyr	Ile	Phe	Val	Gly	Met	Tyr
	130					135					140				
Asn	Ser	Arg	Ile	Asn	Ile	Phe	Asp	Arg	Arg	Thr	Leu	Gln	Phe	Val	Asn
145					150					155					160
Ala	Ile	Gly	Arg	Ser	Asp	Gly	Lys	Trp	Gly	Asp	Asp	Ile	Tyr	Ser	Met
				165					170					175	
Thr	His	Cys	Tyr	Gly	Leu	Arg	Glu	Cys	Gly	Glu	Arg	Leu	Met	Val	Arg
			180					185					190		

Asp Lys Asn Thr Ile Arg Gly Tyr Trp Ile Tyr Glu Ala Val Thr Glu
 195 200 205
 Pro Ala Phe Arg Val Pro Trp Ile Gly Lys Val Lys Val Pro Glu Gly
 210 215 220
 Val Gly Tyr Asp Tyr Gln Ala Arg Ile His Gly Met Ala Glu Tyr Asp
 225 230 235 240
 Gly Arg Met Tyr Leu Thr Asp Trp Tyr Asn Lys Ser Val Gln Val Phe
 245 250 255
 Thr Pro Ser Lys Met Glu Ile Val Phe Gly Glu Glu Thr His Ile Thr
 260 265 270
 Ser Asp Ala Val Phe Lys Tyr Asp Asp Ile Gln Pro Leu Gly Leu Leu
 275 280 285
 Ala Tyr Gly Gly Glu Leu Leu Met Ser Val Gln Lys Ser Gly Lys Ile
 290 295 300
 Gln Arg Tyr Asp Pro Glu Thr Gly Asp Leu Leu Gly Val Leu Ala Glu
 305 310 315 320
 Phe Pro Gly Lys Glu Ile Gly Arg Met Glu Ile Ala Arg Gly Met Leu
 325 330 335
 Tyr Tyr Ile Asp Leu Lys Ala Gly Lys Leu Met Lys Ala Lys Gly Glu
 340 345 350

<210> 7057

<211> 283

<212> PRT

<213> B.fragilis

<400> 7057

Leu Met Lys Ser Cys Ser Met Leu Leu Pro Asp Thr Val Ala Gly Gly
 1 5 10 15
 Lys Thr Gly Ser Ile Leu Val Arg His Gly Pro Ser Thr His Ala Leu
 20 25 30
 Thr Ser Pro Phe Ala Glu Ala Asp Thr Val Gly Gly Lys Lys Leu Asn
 35 40 45
 Gln Met Lys Arg Ile Val Phe Leu Met Leu Ser Leu Gly Met Ala Val
 50 55 60
 Thr Leu His Ala Gln Trp Thr Ala Lys Asp Ser Val Asn Leu Gln Arg
 65 70 75 80
 Ile Leu Asn Gly Lys Glu Asp Ile Lys Leu Asn Met Asp Ala Val Lys
 85 90 95
 Gln Ile Asp Phe Asn Ser Ser Pro Thr Val Pro Lys Met Ser Lys Glu
 100 105 110
 Arg Pro Gly Leu Arg Leu Asp Glu Thr Leu Pro Gln Val Leu Glu Lys
 115 120 125
 Lys Lys Val Val Leu Thr Leu Arg Pro Tyr Thr Ala Asn Thr Lys Tyr
 130 135 140
 Asn Trp Asp Pro Ile Tyr Gln Lys Lys Ile Arg Val Asp Ala Asp Thr
 145 150 155 160
 Trp Arg Gly Asp Pro Phe Val Glu Leu Tyr Gln Thr Val Pro Ser Asn
 165 170 175
 Trp Ala Lys Asn Val Tyr Asp Lys Gly Ile Arg Ser Ser Tyr Glu Glu
 180 185 190
 Ile Arg Ser Ser Gly Leu Arg His Asn Leu Phe Gly Glu Arg Ala Asn
 195 200 205
 Gly Met Met Val Pro Thr Gln Ser Met Val His Thr Ser Ala Met Lys
 210 215 220
 Leu Gly Lys Ser Gly Val Thr Val Asn Gly Gly Thr Ile Gly Gly Leu
 225 230 235 240
 Asp Leu Met Thr Ile Phe Thr Lys Asp Phe Trp Asp Lys Lys Gly Arg
 245 250 255

Asn Arg Arg Ser Arg Thr Leu Glu Val Leu Lys Ala Tyr Gly Asp Ser
 260 265 270
 Thr Thr Val Leu Leu Pro Glu Pro Ile Val His
 275 280

<210> 7058

<211> 214

<212> PRT

<213> B.fragilis

<400> 7058

Cys Ser Phe Gly Ser Met Lys Pro Leu Ile Leu Val Gly Gly Gly Gly
 1 5 10 15
 His Cys Lys Ser Val Ile Asp Val Ala Glu Ser Met Arg His Ser Ile
 20 25 30
 Leu Gly Ile Leu Asp Leu Pro Lys Asn Val Gly His Ser Ile Leu Gly
 35 40 45
 Tyr Pro Val Leu Gly Thr Asp Asp Asp Ile Pro Leu Phe Val Asn Gln
 50 55 60
 Ala Asp Phe Ile Val Thr Val Gly Phe Ile Lys Glu Ser Ser Leu Arg
 65 70 75 80
 Leu Lys Ile His Asp Lys Ile Arg Thr Ser Gly Gly His Leu Gly Thr
 85 90 95
 Leu Ile Ala Ser Thr Ala Tyr Val Ser Arg His Ala Gln Ile Gly Ala
 100 105 110
 Gly Thr Val Val Met His His Ala Phe Val Asn Ala Gly Ala Arg Ile
 115 120 125
 Gly Ser Gly Cys Ile Ile Asn Thr Phe Val Asn Val Glu His Asp Ala
 130 135 140
 Leu Ile Gly Asp Asn Cys His Ile Ser Thr Gly Ala Met Val Asn Gly
 145 150 155 160
 Asp Cys Lys Val Gly Asp Cys Ser Phe Leu Gly Ser Gln Ser Val Met
 165 170 175
 Val Asn Gly Thr Ser Ile Ile Ser Gly Cys Ile Ile Gly Ala Gly Ser
 180 185 190
 Val Val Arg Lys Asp Ile Leu Glu Lys Gly Ile Tyr Ser Gly Asn Pro
 195 200 205
 Ala Ile Leu Lys Met Lys
 210

<210> 7059

<211> 68

<212> PRT

<213> B.fragilis

<400> 7059

Asn Lys Lys Gly Lys Ile Met Ser Leu Glu Asp Ala Ile Met Gly Gly
 1 5 10 15
 Ile Val Phe Lys Gly Lys Lys Glu Gly Pro Lys Lys Asp Glu Asn Lys
 20 25 30
 Val Lys Thr Lys Ala Lys Lys Thr Tyr Ile Lys Gly Thr His Gly
 35 40 45
 Ser Gly Ala Ala Lys Met Lys Ala Glu Ile Arg Arg Lys Arg Ala Asn
 50 55 60
 Arg His Lys Arg
 65

<210> 7060

<211> 443

<212> PRT

<213> B.fragilis

<400> 7060

Arg	Lys	Ile	Leu	Asn	Tyr	Asn	Ile	Met	Glu	Lys	Ile	Val	Tyr	Ile	Val
1			5						10					15	
His	Ala	Val	Asp	Thr	Glu	Gly	Pro	Leu	Tyr	Glu	Ser	Thr	Glu	Ala	Thr
			20					25					30		
Phe	Glu	Arg	Leu	Lys	Ser	Ser	Phe	Asn	Ile	Glu	Leu	Glu	Pro	Thr	Phe
		35					40					45			
Ala	Asn	Leu	Gln	Lys	Leu	Arg	His	Arg	Glu	Ile	Phe	Leu	Asn	Gly	Leu
	50					55					60				
Glu	Asp	Lys	Ile	Val	Glu	Phe	Leu	Asp	Pro	Ser	Leu	Gln	Asn	Tyr	Asn
65					70				75					80	
Asp	Ser	Trp	Asp	Lys	Ile	Asp	Leu	Met	Leu	Ser	Lys	Ile	Leu	Ser	Asn
			85					90						95	
Asp	Phe	Arg	Phe	Lys	Phe	Cys	Asp	Ser	Phe	Ser	Gly	Gly	Trp	Val	Tyr
		100					105						110		
Asn	Trp	Phe	Cys	Leu	Asp	His	Val	Gly	Tyr	Asp	Tyr	Asn	Pro	Arg	Arg
	115						120					125			
Arg	Asp	Met	Gly	Tyr	His	Asn	Ile	His	Asp	Arg	Tyr	Ile	Glu	Leu	Leu
	130					135						140			
Asp	Lys	Tyr	Gly	Lys	Tyr	Lys	Asp	Asp	Ile	Gln	Trp	His	Phe	His	Pro
145					150					155					160
Met	Ser	His	Tyr	Lys	Glu	Ala	His	Arg	Ala	Gly	Lys	Ser	Tyr	Glu	His
			165					170						175	
Ser	Glu	Thr	Leu	Tyr	Gln	Ile	Leu	Ser	Arg	Arg	Ile	Ile	Asp	Arg	Asn
		180					185						190		
Phe	Phe	Pro	Ser	Val	Phe	Arg	Ala	Gly	Cys	Val	Thr	Glu	Arg	Pro	Asp
	195						200					205			
Ala	Asn	Trp	Phe	Leu	Glu	Gln	Trp	Ile	Pro	Phe	Asp	Cys	Ser	Asn	Phe
	210					215					220				
Ala	Val	Glu	Asn	Glu	Asn	Lys	Glu	Gln	Tyr	Arg	Asp	Gln	Arg	Asn	Gly
225					230					235					240
Gln	Ala	Gly	Asp	Trp	Arg	Arg	Ala	Pro	Ser	Asp	Trp	Arg	Ile	Tyr	His
			245						250					255	
Pro	Asp	Phe	Tyr	Asp	Tyr	Gln	Lys	Glu	Gly	Cys	Cys	His	Arg	Ser	Ile
		260						265					270		
Gly	Arg	Phe	Leu	Asn	Ile	Val	Ser	Arg	Tyr	Gly	Asn	Ile	Thr	Ser	Tyr
		275					280					285			
Glu	Ile	Glu	Lys	Ala	Phe	Gln	Arg	Ala	Asn	Glu	Gly	Leu	Pro	Thr	Leu
	290					295					300				
Leu	Gly	Ile	Phe	Asn	His	Asp	Phe	Arg	Asn	Met	Gly	Asn	Glu	Ile	Glu
305					310					315					320
Tyr	Phe	Cys	Asp	Leu	Leu	Tyr	Asp	Ile	Ser	Arg	Lys	Tyr	Asn	Asn	Val
			325						330					335	
Ser	Phe	Lys	Phe	Ala	Thr	Ala	Lys	Glu	Ala	Phe	Asn	Ala	Val	Leu	Gln
		340					345						350		
Asn	Lys	Leu	Ser	Glu	Phe	Asp	Leu	Asn	Val	Arg	Leu	Lys	Gly	Asn	Glu
	355						360					365			
Leu	Tyr	Val	Asp	Thr	Ile	Lys	Gly	Cys	Val	Phe	Gly	Pro	Gln	Pro	Tyr
	370					375					380				
Leu	Ala	Ile	Lys	Thr	Lys	Ser	Gly	Lys	Tyr	Ile	His	Asp	Asn	Phe	Asp
385					390					395					400
Phe	Gly	Leu	Asp	Gly	Lys	Ser	Trp	Ser	Tyr	Val	Phe	Asp	Glu	Asn	Met
			405						410					415	
Ile	Lys	Phe	Glu	Asp	Val	Asp	Thr	Ile	Gly	Val	Ala	Ala	Asn	Asp	Met
			420					425					430		
Cys	Gly	Gln	Val	Ser	Leu	Lys	Cys	Ile	Lys	Ala					

435

440

<210> 7061
 <211> 311
 <212> PRT
 <213> B.fragilis

<400> 7061

Val	Val	Phe	Phe	Ala	Phe	Val	Phe	Thr	Leu	Phe	Ser	Ser	Phe	Phe	Gly
1				5					10					15	
Pro	Ser	Phe	Phe	Pro	Leu	Lys	Thr	Ile	Pro	Pro	Ile	Ile	Ala	Ser	Ser
			20					25					30		
Lys	Leu	Ile	Ile	Phe	Pro	Phe	Leu	Phe	Tyr	Ile	Phe	Arg	Gly	Gln	Arg
		35					40					45			
Tyr	Ser	Phe	Ser	Val	Asn	Ser	Leu	Ser	Leu	Pro	Ala	Val	Thr	Thr	Lys
	50					55					60				
Asn	Gln	Ser	Met	Asn	Thr	Ser	Leu	Leu	Pro	Ala	Glu	Lys	Asp	Pro	Met
65					70					75				80	
Gly	Ala	Ala	Ile	Ala	Asp	Phe	Tyr	His	Arg	Gln	Lys	Ala	Asp	Arg	Leu
				85					90					95	
Arg	Val	Phe	Ser	Ser	Gln	Phe	Asp	Glu	Asp	Glu	Ile	Pro	Val	Lys	Gln
			100					105					110		
Leu	Phe	Arg	Lys	Ala	Gly	Gln	Met	Pro	Leu	Leu	Glu	Arg	Thr	Ala	Leu
		115					120					125			
Ala	Met	Ala	Thr	Gly	Thr	Ile	Leu	Asp	Val	Gly	Ala	Gly	Ser	Gly	Cys
	130					135					140				
His	Ala	Leu	Ala	Leu	Gln	Glu	Ser	Gly	Lys	Glu	Val	Ser	Ala	Ile	Asp
145					150					155				160	
Ile	Ser	Pro	Leu	Ser	Val	Glu	Val	Met	Lys	Leu	Arg	Gly	Val	Lys	Asp
				165					170					175	
Ala	Arg	Gln	Val	Asn	Leu	Phe	Asp	Glu	Arg	Phe	Ala	Ala	Thr	Phe	Asp
			180					185					190		
Thr	Ile	Leu	Met	Leu	Met	Asn	Gly	Ser	Gly	Ile	Ile	Gly	Arg	Leu	Glu
		195					200					205			
Asn	Met	Pro	Leu	Phe	Phe	Arg	Lys	Met	Lys	Gln	Leu	Leu	Arg	Pro	Asp
	210					215					220				
Gly	Cys	Ile	Leu	Met	Asp	Ser	Ser	Asp	Leu	Arg	Tyr	Leu	Phe	Glu	Asp
225					230				235					240	
Glu	Asp	Gly	Ser	Phe	Leu	Ile	Asp	Leu	Ala	Gly	Asp	Tyr	Tyr	Gly	Glu
				245					250					255	
Ile	Asp	Phe	Arg	Met	Gln	Tyr	Lys	Asp	Ile	Gln	Gly	Asp	Pro	Phe	Asp
			260					265					270		
Trp	Leu	Tyr	Ile	Asp	Phe	Gln	Thr	Leu	Ser	Ala	Tyr	Ala	Ala	Asp	Asn
		275					280					285			
Gly	Phe	Lys	Ala	Glu	Met	Ile	Lys	Glu	Gly	Lys	His	Tyr	Asp	Tyr	Leu
	290					295					300				
Ala	Arg	Leu	Thr	Val	Ala	Leu									
305					310										

<210> 7062
 <211> 244
 <212> PRT
 <213> B.fragilis

<400> 7062

Asn	Leu	Phe	Ile	Lys	Glu	Arg	Ile	Tyr	Ile	Met	Lys	Lys	Val	Val	His
1				5					10					15	
Arg	Ser	Asp	Thr	Arg	Gly	Arg	Ser	Val	Tyr	Asp	Trp	Leu	Asp	Ser	His
			20					25					30		


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<210> 7063
<211> 198
<212> PRT
<213> B.fragilis
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Ile	Ser	Phe	Leu	Ile	Arg	Phe	Phe	Asp	Ile	Val	Phe	Ser	Leu	Leu	Gly
1				5					10					15	
Ile	Leu	Leu	Leu	Ser	Pro	Val	Phe	Leu	Leu	Leu	Tyr	Ile	Ala	Ile	Cys
			20					25					30		
Leu	Glu	Ser	Lys	Gly	Gly	Gly	Phe	Tyr	Lys	Gln	Leu	Arg	Val	Gly	Arg
		35					40					45			
Tyr	Gly	Gly	Asp	Phe	Tyr	Val	Tyr	Lys	Phe	Arg	Ser	Met	Arg	Val	Gly
	50					55					60				
Ala	Asp	Lys	Lys	Gly	Leu	Ile	Thr	Val	Gly	Gly	Arg	Asp	Pro	Arg	Ile
65					70					75					80
Thr	Arg	Thr	Gly	Tyr	Leu	Ile	Arg	Lys	Tyr	Lys	Leu	Asp	Glu	Leu	Pro
				85					90					95	
Gln	Leu	Phe	Asn	Val	Leu	Lys	Gly	Asp	Met	Ser	Leu	Val	Gly	Pro	Arg
			100					105					110		
Pro	Glu	Val	Arg	Lys	Tyr	Val	Asp	Leu	Tyr	Thr	Asp	Glu	Gln	Lys	Lys
		115					120					125			
Val	Leu	Ser	Val	Arg	Pro	Gly	Ile	Thr	Asp	Tyr	Ala	Ser	Ile	Glu	Tyr
	130					135					140				
Val	Asp	Glu	Asn	Met	Ile	Leu	Gly	Glu	Ala	Ser	Asp	Pro	Asp	Arg	Ala
145					150					155					160
Tyr	Ile	Glu	Gln	Ile	Met	Pro	Asp	Lys	Ile	Arg	Tyr	Asn	Met	Lys	Tyr
				165					170					175	
Ile	Cys	Asn	Arg	Ser	Val	Lys	Glu	Tyr	Phe	Lys	Ile	Ile	Phe	Leu	Thr
			180					185					190		

Phe Trp Ser Ile Ile Arg
195

<210> 7064

<211> 372

<212> PRT

<213> B.fragilis

<400> 7064

Ser	Asn	Val	Met	Ile	Ile	Gly	Val	Pro	Lys	Glu	Ile	Lys	Asn	Asn	Glu
1				5					10					15	
Asn	Arg	Val	Gly	Met	Thr	Pro	Ser	Gly	Val	Ala	Glu	Leu	Val	Lys	Arg
			20					25					30		
Gly	His	Thr	Val	Tyr	Ile	Gln	His	Thr	Ala	Gly	Glu	Asn	Ser	Gly	Phe
			35				40					45			
Gln	Asp	Glu	Ala	Tyr	Thr	Ala	Val	Gly	Ala	Gln	Ile	Leu	Pro	Thr	Met
			50			55					60				
Glu	Glu	Thr	Tyr	Ala	Met	Ala	Gln	Met	Ile	Val	Lys	Val	Lys	Glu	Pro
65					70					75				80	
Ile	Ala	Pro	Glu	Tyr	Arg	Leu	Ile	Arg	Lys	Gly	Gln	Val	Val	Phe	Thr
				85					90					95	
Tyr	Phe	His	Phe	Ala	Ser	Asp	Arg	Glu	Leu	Thr	Leu	Ala	Met	Ile	Glu
			100					105					110		
Asn	Gly	Ser	Val	Cys	Leu	Ala	Tyr	Glu	Thr	Val	Glu	Lys	Ala	Asp	His
			115				120					125			
Ser	Leu	Pro	Leu	Leu	Ile	Pro	Met	Ser	Glu	Val	Ala	Gly	Arg	Met	Ala
	130					135					140				
Ile	Gln	Glu	Gly	Ala	Arg	Phe	Leu	Glu	Lys	Pro	Gln	Gly	Gly	Lys	Gly
145					150					155				160	
Ile	Leu	Pro	Gly	Gly	Val	Pro	Gly	Val	Lys	Pro	Ala	Lys	Val	Leu	Ile
				165					170					175	
Leu	Gly	Gly	Gly	Ile	Val	Gly	Ser	Asn	Ala	Ala	Gln	Met	Ala	Ala	Gly
			180					185					190		
Leu	Gly	Ala	Asp	Val	Thr	Ile	Ala	Asp	Ile	Asn	Leu	Ser	Arg	Leu	Arg
		195					200					205			
Tyr	Leu	Ser	Glu	Thr	Leu	Pro	Lys	Asn	Val	Lys	Thr	Leu	Tyr	Ala	Ser
	210					215					220				
Glu	Val	Arg	Leu	Lys	Lys	Glu	Leu	Pro	Asp	Val	Asp	Leu	Val	Val	Gly
225					230					235				240	
Ser	Val	Leu	Ile	Pro	Gly	Asp	Lys	Ala	Pro	His	Leu	Ile	Thr	Arg	Asp
				245				250						255	
Met	Leu	Lys	Met	Met	Gln	Pro	Gly	Thr	Val	Leu	Val	Asp	Val	Ala	Ile
			260					265					270		
Asp	Gln	Gly	Gly	Cys	Phe	Glu	Thr	Ser	His	Pro	Thr	Thr	His	Ser	Glu
		275					280					285			
Pro	Thr	Tyr	Val	Val	Asp	Gly	Ile	Val	His	Tyr	Ala	Val	Ala	Asn	Ile
	290					295					300				
Pro	Gly	Ala	Val	Pro	Tyr	Thr	Ser	Thr	Leu	Ala	Leu	Thr	Asn	Ala	Thr
305					310					315				320	
Leu	Pro	Tyr	Val	Ile	Ala	Leu	Ala	Asn	Lys	Gly	Trp	Arg	Lys	Ala	Cys
				325					330					335	
Lys	Lys	Asp	Pro	Ala	Leu	Ala	Leu	Gly	Leu	Asn	Val	Val	Glu	Gly	Lys
			340					345					350		
Val	Val	Tyr	Arg	Ala	Ile	Ala	Asp	Val	Phe	Gly	Leu	Lys	Tyr	Glu	Gln
		355					360					365			
Leu	Asn	Leu	Glu												
			370												

<210> 7065

<211> 250
 <212> PRT
 <213> B.fragilis

<400> 7065

Ile Gly Tyr Met Lys His Ile Phe Asn Lys Glu Gln Cys Gln Lys Ala
 1 5 10 15
 Thr Phe Ile Leu Glu Ser Pro Leu Ala Lys Leu Ser Glu Leu Tyr Ser
 20 25 30
 Ser Glu Ile Lys Asp Leu Ala Val Val Trp Cys Tyr Tyr Ser Gly Arg
 35 40 45
 Ile Glu Gly Asn Thr Tyr Thr Tyr Val Glu Thr Glu Ala Leu Leu Lys
 50 55 60
 Asp Gly Ile Thr Ser Glu Lys Lys Tyr Glu Asp Ala Lys Met Leu Lys
 65 70 75 80
 Asn Leu Tyr Asn Thr Phe Ile Ser Glu Leu Glu Tyr Ile His Gln Glu
 85 90 95
 Lys Asn Lys Glu Ile Ile Asp Glu Arg Thr Leu Phe Arg Leu His Gln
 100 105 110
 Ser Ile Ser Thr Gly Leu Val Ser Asn Glu Glu Ser Gly Phe Leu Arg
 115 120 125
 Thr Arg Ala Val Arg Ile Ser Gly Thr Asp Tyr Ala Pro Pro Lys Asp
 130 135 140
 Leu Gln Glu Ile Lys Ser Lys Leu Gly Glu Ile Leu Tyr Glu Gln Asp
 145 150 155 160
 Val Tyr Thr Asn Pro Leu Glu Lys Ala Val Phe Leu His Cys Asn Ile
 165 170 175
 Ala Arg Leu Gln Pro Phe Ile Asp Gly Asn Lys Arg Thr Ser Arg Met
 180 185 190
 Ile Glu Ser Val Val Met Met Asn Ala Asp Ile Ile Pro Val Tyr Ser
 195 200 205
 Ala Lys Asp Ala Asp Ile Leu Asn Tyr Arg Lys Gly Leu Ile Arg Phe
 210 215 220
 Tyr Glu Thr Gly Asp Tyr Thr Lys Tyr Ser Asp Tyr Phe Leu Asn Arg
 225 230 235 240
 Gln Leu Glu Arg Ile Lys Glu Ile Asp Ile
 245 250

<210> 7066
 <211> 608
 <212> PRT
 <213> B.fragilis

<400> 7066

Ile Arg Asp Met Arg Lys Leu Leu Tyr Val Ile Leu Leu Leu Leu Phe
 1 5 10 15
 Arg Leu Leu Met Phe Pro Gly Ala Val Cys Ala Glu Ile Leu Ser Leu
 20 25 30
 Pro Asp Ser Leu Ile Thr Asp Asp Asn Val Tyr Lys Tyr Thr Phe Ser
 35 40 45
 Asp Phe Asp Lys Ala Gln Gln Val Met Glu Gln Leu Arg Lys Arg Lys
 50 55 60
 Ser Leu Ser Met Phe Arg Met Asp Val Val Glu Gly Asp Leu Tyr Phe
 65 70 75 80
 Asn Val Gly Gln Tyr Tyr Lys Ala Leu Lys Phe Tyr Lys Arg Ala Leu
 85 90 95
 Asp Ser Asp Ser Val Arg Asn Asn Asp Lys Asn Tyr Met Glu Gln Val
 100 105 110
 His Arg Met Ile Ser Cys Tyr Asp Cys Leu His Asn Glu Asn Lys Lys

115	120	125
Ser Leu Tyr Val Tyr Leu Leu Leu Lys Arg Ala Glu Gln Cys Gly Asp		
130	135	140
Lys Ala Met Gln Ser Val Ala Leu Phe Asn Met Gly Lys Met Leu Tyr		
145	150	155
Tyr Gln Gly Asn Lys Glu Lys Gly Tyr Glu Tyr Leu Glu Gln Ala Ile		
165	170	175
Glu Met Met Ser Lys Thr Asp Tyr Arg Tyr Lys Tyr Asp Asn Leu Arg		
180	185	190
Tyr Asp Tyr Asn Thr Leu Leu Ile Phe Gln Lys Ser Asp Arg Arg Asn		
195	200	205
Glu Glu Ala Leu Arg Thr Leu Ala Ala Leu Glu Lys Val Val Thr Glu		
210	215	220
Glu Thr Gly Ser Glu Thr Pro Met Glu Gly Leu Ser Ala Lys Glu Lys		
225	230	235
Lys Ala Met Tyr Ala His Tyr Ala Val Val Leu Phe Arg Leu Gly Gln		
245	250	255
Ala Glu Glu Ala Glu Arg Tyr Tyr Arg Lys Phe Leu Ala Ala Ser Glu		
260	265	270
Glu Tyr Asp Arg Asp Asp Tyr Leu Ile Met Pro Tyr Leu Phe Asp Arg		
275	280	285
Lys Met Tyr Asp Gln Val Ile Arg Met Asn Ala Ala Arg Glu Lys Met		
290	295	300
Tyr Ile Met Arg Gly Asp Thr Val Asn Tyr Tyr Met Thr Thr Ile Lys		
305	310	315
Arg Ser Leu Gly Trp Ala Tyr Arg Asp Lys Gly Asp Tyr Arg Thr Ala		
325	330	335
Ala Arg Tyr Phe Glu Gln Leu Ala Val Leu Arg Asp Ser Ile Lys Asn		
340	345	350
Arg Glu Gln Lys Ser Ala Ala Leu Glu Leu Ala Ala Val Tyr Glu Thr		
355	360	365
Asn Glu Lys Asp Leu Phe Ile Gln Gln Gln Ala Ala Asp Met Gln Lys		
370	375	380
Arg Asn Leu Leu Leu Val Phe Thr Leu Cys Ile Val Phe Leu Leu Gly		
385	390	395
Val Leu Leu Trp Arg Thr Ile Arg His Asn Arg Ile Ile Arg Arg Lys		
405	410	415
Asn Lys Ala Met Val Gly Thr Ile Glu Asp Leu Leu Ile His Lys Glu		
420	425	430
Glu Leu Tyr Arg Lys Lys Glu Glu Asn Leu Ile Leu Lys Glu Gln Leu		
435	440	445
Glu Arg Glu Gln Asn Leu Arg Met Ser Ala Gly Gly Gly Ser Leu Ser		
450	455	460
Thr Asp Lys Asp Gly Lys Ala Glu Thr Thr Val Val Pro Glu Pro Gln		
465	470	475
Ala Gly Asp Gly Asn Asp Ile His Asp Arg Ile Leu Phe Asp Lys Leu		
485	490	495
Glu His Glu Ile Ile Ser Arg Gln Leu Tyr Leu Gln Pro Asp Phe Ser		
500	505	510
Arg Glu Glu Leu Ile Lys Thr Ile Tyr Ile Pro Lys Asn Lys Phe Ala		
515	520	525
Pro Leu Phe Lys Gln Tyr Ala Gly Met Ser Phe Ser Lys Tyr Ile Asn		
530	535	540
Asn Leu Arg Leu Glu Tyr Ala Ala Lys Met Leu Lys Asn His Pro Asp		
545	550	555
Tyr Thr Val Asp Thr Ile Ala Gln Glu Cys Gly Met Ser Thr Gln Ser		
565	570	575
Leu Tyr Arg Leu Phe Ser Gly Lys Tyr Gly Val Thr Pro Thr Asp Phe		
580	585	590

115 120 125
 130 135 140
 145 150 155
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555
 565 570 575
 580 585 590

Gln Val Gly Val Gln His Ile Asn Asn Lys Asn Ile Thr Glu Asp Lys
 595 600 605

<210> 7067

<211> 261

<212> PRT

<213> B.fragilis

<400> 7067

Ser Tyr Thr Ile Lys Thr Glu Met Lys Ile Ser Ile Ile Thr Val Thr
 1 5 10 15
 Phe Asn Ser Glu Lys Thr Ile Asn Asp Thr Ile Gln Ser Val Leu Met
 20 25 30
 Gln Ser Tyr Ser Asn Ile Glu Tyr Ile Ile Ile Asp Gly Lys Ser Asn
 35 40 45
 Asp Ser Thr Leu Gly Ile Val Lys Glu Tyr Ile Pro Leu Phe Ser Gly
 50 55 60
 Arg Leu Lys Tyr Ile Ser Glu Lys Asp Ser Gly Ile Tyr Asp Ala Met
 65 70 75 80
 Asn Lys Gly Ile Lys Leu Ala Ser Gly Asp Ile Ile Gly Ile Ile Asn
 85 90 95
 Ser Asp Asp Phe Tyr Lys Ser Asn Asn Val Ile Ala Ser Val Ala Asn
 100 105 110
 Ala Phe Asn Asp Asn Ser Ile Glu Val Val Phe Gly Asn Ile Gln Phe
 115 120 125
 Val Asn Pro Asn Asn Lys Thr Arg Ile Val Arg Lys Tyr Ser Gly Lys
 130 135 140
 Gly Phe Arg Pro Trp Met Phe Arg Trp Gly Ile Met Pro Pro His Pro
 145 150 155 160
 Ser Phe Phe Thr Arg Lys Ser Cys Tyr Glu Lys Tyr Gly Met Tyr Asn
 165 170 175
 Ser Thr Phe Asn Ile Ser Gly Asp Tyr Asp Leu Met Val Arg Phe Leu
 180 185 190
 Leu Val Lys Lys Leu Lys Tyr Lys Tyr Met Asp Leu Asp Met Val Ile
 195 200 205
 Met Arg Leu Gly Gly Ala Ser Thr Lys Ser Ile Arg Ser Leu Leu Ile
 210 215 220
 Asn Asn Asn Tyr Asn Val Ile Arg Ala Cys Arg Glu Asn Gly Val Tyr
 225 230 235 240
 Thr Asn Ile Phe Met Val Ser Leu Arg Tyr Ile Lys Lys Ile Ser Glu
 245 250 255
 Leu Ile Phe Lys Val
 260

<210> 7068

<211> 490

<212> PRT

<213> B.fragilis

<400> 7068

Ala Asn Tyr Met Lys Gln Tyr Ile Val Ala Leu Met Leu Ala Cys Ser
 1 5 10 15
 Ile Gln Gly His Ser Gln Asp Val Lys Gln Ala Thr Phe Val Pro Pro
 20 25 30
 Phe Asp Phe Thr Leu Thr Leu Ser Gly Asn Phe Gly Glu Ile Arg Ala
 35 40 45
 Asn His Phe His Gly Gly Leu Asp Phe Lys Thr Gln Gly Val Ile Gly
 50 55 60
 Lys Pro Val Arg Ala Leu Ala Asp Gly Tyr Ile Ser Arg Ile Arg Val

65					70					75				80
Thr	Asn	Gly	Ser	Gly	His	Val	Leu	Asp	Val	Val	Tyr	Asn	Asn	Gly
				85					90					95
Thr	Thr	Ile	Asn	Arg	His	Leu	Ser	Gly	Phe	Met	Pro	Asp	Ile	Ala
			100					105					110	Arg
Arg	Val	Glu	Lys	Leu	Gln	Tyr	Glu	Lys	Glu	Asp	Trp	Glu	Val	Glu
		115					120					125		Ile
Val	Pro	Glu	Pro	Gly	Glu	Tyr	Pro	Val	Lys	Ala	Gly	Gln	Gln	Ile
	130					135					140			Ala
Trp	Ser	Gly	Asn	Thr	Gly	Tyr	Ser	Phe	Gly	Pro	His	Leu	His	Leu
145					150					155				160
Val	Met	Glu	Thr	Ala	Thr	Gly	Glu	Ser	Ile	Asp	Pro	Met	Pro	Phe
				165					170					175
Lys	Ser	Lys	Ile	Lys	Asp	Asn	Thr	Ala	Pro	Arg	Ala	Glu	Gly	Ile
			180					185					190	Met
Leu	Phe	Pro	Gln	Pro	Gly	Ser	Gly	Val	Val	Gly	Gly	Ser	Pro	Glu
		195					200					205		Arg
Gln	Ser	Phe	Pro	Ile	Asn	Thr	Ala	Arg	Pro	Ile	Glu	Ala	Trp	Gly
	210					215					220			Val
Ile	Gly	Ser	Gly	Ile	Lys	Ala	Tyr	Asp	Tyr	Met	Asp	Gly	Val	His
225					230				235					Asn
Arg	Tyr	Gly	Val	His	Thr	Val	Val	Leu	Arg	Val	Asp	Gly	Thr	Glu
				245					250					255
Phe	Arg	Ser	Val	Val	Asp	Arg	Phe	Ser	Gln	Asp	Glu	Asn	Arg	Met
			260					265					270	Ile
Asn	Ser	Trp	Thr	Cys	Gly	Gln	Tyr	Met	Lys	Ser	Phe	Ile	Asp	Pro
		275					280					285		Gly
Asn	Thr	Leu	Arg	Met	Leu	Arg	Ala	Ser	Asn	Asp	Asn	Arg	Gly	Leu
	290					295					300			Val
Thr	Ile	Asp	Glu	Glu	Arg	Asp	Tyr	Lys	Phe	Glu	Tyr	Glu	Leu	Lys
305					310					315				Asp
Ala	Phe	Gly	Asn	Thr	Ser	Arg	Tyr	Arg	Phe	Thr	Val	Arg	Gly	Lys
				325					330					Arg
Gln	Pro	Ile	Gln	Pro	Leu	Gly	His	Arg	Glu	Lys	Tyr	Phe	Phe	Ala
			340					345					350	Trp
Asp	Lys	Thr	Asn	Phe	Leu	Gln	Glu	Pro	Gly	Leu	Thr	Leu	Thr	Val
		355					360					365		Pro
Arg	Gly	Met	Leu	Tyr	Asp	Asn	Val	Pro	Leu	Asn	Tyr	Glu	Val	His
	370					375					380			Ser
Asp	Ser	Gly	Ala	Ile	Ala	Tyr	Thr	Tyr	Gln	Leu	Asn	Asp	Glu	Lys
385					390					395				Val
Pro	Leu	His	Gly	Gly	Cys	Glu	Leu	Arg	Ile	Gly	Leu	Arg	Arg	Gln
				405					410					Pro
Val	Ala	Asp	Ser	Thr	Lys	Tyr	Tyr	Val	Ala	Arg	Val	Thr	Pro	Lys
			420					425					430	Gly
Ser	Met	Tyr	Ser	Ala	Gly	Gly	Thr	Tyr	Glu	Asp	Gly	Phe	Met	Lys
		435					440					445		Thr
Arg	Ile	Arg	Glu	Leu	Gly	Thr	Tyr	Thr	Val	Ala	Val	Asp	Thr	Val
	450					455					460			Pro
Pro	Glu	Ile	Thr	Pro	Val	Gly	Lys	Asn	Thr	Trp	Gly	Arg	Asn	Gly
465					470					475				Lys
Ser	Ser	Pro	Arg	Gly	Trp	Lys	Asp	Gln	Arg					
				485					490					

<210> 7069

<211> 282

<212> PRT

<213> B.fragilis

<400> 7069

Ile Lys Pro Met Asn Glu Leu Ile Asp Arg Leu Ile Asp Leu Ala Phe
 1 5 10 15
 Ala Glu Asp Ile Gly Asp Gly Asp His Thr Thr Leu Ser Cys Ile Pro
 20 25 30
 Ala Thr Ala Met Gly Lys Ser Lys Leu Leu Ile Lys Glu Ala Gly Val
 35 40 45
 Leu Ala Gly Ile Glu Ile Ala Lys Glu Ile Phe His Arg Phe Asp Pro
 50 55 60
 Thr Met Lys Val Glu Val Phe Ile Asn Asp Gly Ala Glu Val Lys Pro
 65 70 75 80
 Gly Asp Val Ala Met Ile Val Glu Gly Lys Ile Gln Ser Leu Leu Gln
 85 90 95
 Thr Glu Arg Leu Met Leu Asn Val Met Gln Arg Met Ser Gly Ile Ala
 100 105 110
 Thr Met Thr Arg Lys Tyr Val Lys Gln Leu Glu Gly Thr Lys Thr Arg
 115 120 125
 Val Leu Asp Thr Arg Lys Thr Thr Pro Gly Leu Arg Met Leu Glu Lys
 130 135 140
 Ala Ala Val Lys Ile Gly Gly Gly Val Asn His Arg Ile Gly Leu Phe
 145 150 155 160
 Asp Met Ile Leu Leu Lys Asp Asn His Val Asp Phe Ala Gly Gly Ile
 165 170 175
 Asp Lys Ala Ile Asn Arg Ala Lys Glu Tyr Cys Lys Glu Lys Gly Lys
 180 185 190
 Asp Leu Lys Ile Glu Ile Glu Val Arg Asn Phe Asp Glu Leu Arg Gln
 195 200 205
 Val Leu Ser Ile Gly Gly Val Asp Arg Ile Met Leu Asp Asn Phe Thr
 210 215 220
 Pro Glu Asn Thr Lys Lys Ala Val Glu Met Ile Gly Gly Lys Tyr Glu
 225 230 235 240
 Thr Glu Ser Ser Gly Gly Ile Thr Phe Asp Thr Leu Arg Asp Tyr Ala
 245 250 255
 Glu Cys Gly Val Asp Phe Ile Ser Val Gly Ala Leu Thr His Ser Val
 260 265 270
 Lys Gly Leu Asp Met Ser Phe Lys Ala Cys
 275 280

<210> 7070

<211> 230

<212> PRT

<213> B.fragilis

<400> 7070

Lys Thr Gly Ile Met Lys Glu Lys Val Ser Val Pro Phe Met Leu Leu
 1 5 10 15
 Gly Ile Leu Phe Asn Val Cys Leu Ile Ala Ala Asn Leu Leu Glu Thr
 20 25 30
 Lys Val Ile Gln Val Gly Ser Ile Thr Val Thr Ala Gly Leu Leu Val
 35 40 45
 Phe Pro Ile Ser Tyr Ile Ile Asn Asp Cys Ile Ala Glu Val Trp Gly
 50 55 60
 Phe Lys Lys Ala Arg Leu Ile Ile Trp Ser Gly Phe Ala Met Asn Phe
 65 70 75 80
 Phe Val Val Ala Leu Gly Leu Ile Ala Val Ala Leu Pro Ala Ala Pro
 85 90 95
 Phe Trp Glu Gly Glu Gln His Phe Asp Phe Val Phe Gly Met Ala Pro
 100 105 110
 Arg Ile Val Val Ala Ser Leu Leu Ala Phe Leu Val Gly Ser Phe Leu

115	120	125
Asn Ala Tyr Val Met Ser Lys Met Lys Val Ala Ser Gly Gly Arg Asn		
130	135	140
Phe Ser Ala Arg Ala Ile Trp Ser Thr Val Val Gly Glu Thr Ala Asp		
145	150	155
Ser Leu Ile Phe Phe Pro Ile Ala Phe Gly Gly Leu Ile Ala Trp Pro		
	165	170
Glu Leu Leu Val Met Met Gly Thr Gln Ile Val Leu Lys Ser Leu Tyr		
	180	185
Glu Val Ile Ile Leu Pro Ile Thr Ile Arg Val Val Lys Ala Val Lys		
	195	200
Arg Ile Asp Gly Ser Asp Val Tyr Asp Thr Asp Ile Ser Tyr Asn Val		
	210	215
Leu Lys Val Lys Asp Ile		220
225	230	

<210> 7071
 <211> 132
 <212> PRT
 <213> B.fragilis

<400> 7071
Lys Thr Asn Leu Glu Thr Met Glu Ile Lys Ser Arg Phe Asp His Phe
1 5 10 15
Asn Ile Asn Val Thr Asp Leu Glu Arg Ser Ile Ala Phe Tyr Glu Lys
20 25 30
Ala Leu Gly Leu Lys Glu His His Arg Lys Glu Ala Ala Asp Gly Ser
35 40 45
Phe Ile Leu Val Tyr Leu Thr Asp Asn Thr Thr Gly Phe Leu Leu Glu
50 55 60
Leu Thr Trp Leu Arg Asp His Thr Glu Ala Tyr Glu Leu Gly Glu Asn
65 70 75 80
Glu Ser His Leu Cys Phe Arg Val Ala Gly Asp Tyr Asp Ala Val Arg
85 90 95
Gln Tyr His Lys Glu Met Asp Cys Val Cys Phe Glu Asn Thr Ser Met
100 105 110
Gly Leu Tyr Phe Ile Asn Asp Pro Asp Asp Tyr Trp Ile Glu Ile Leu
115 120 125
Pro Glu Arg Leu
130

<210> 7072
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 7072
Phe Tyr Asp Leu Lys Phe Asp Thr Met Phe Leu Ser Val His Met Ile
1 5 10 15
Tyr Leu Leu Asp Val Pro Pro Tyr Asn Glu Thr Leu Asp Gly Asn Ala
20 25 30
Thr Glu Tyr His Leu Tyr Ile Cys His Ile Tyr Pro Ile Ile Gln Cys
35 40 45
Asn Asp His Val Tyr Tyr Asp Ile Pro Tyr Arg Val Phe
50 55 60

<210> 7073
 <211> 92
 <212> PRT

<213> B.fragilis

<400> 7073

Ala	Thr	Cys	Phe	Ile	Leu	Phe	Leu	Glu	Asp	Thr	Leu	Arg	Gln	Leu	Leu
1				5					10					15	
Ala	Arg	Ser	Arg	Tyr	Leu	Leu	Phe	Lys	Ala	Pro	Gly	Lys	Trp	Thr	Asp
			20					25					30		
Ser	Gln	Lys	Arg	Arg	Ala	Gly	Ile	Leu	Phe	Lys	Gln	Phe	Pro	Asp	Ile
		35					40					45			
Lys	Ala	Val	Cys	Tyr	Tyr	Ala	Leu	Arg	Trp	Gly	Lys	Ile	Phe	Thr	Asp
	50					55					60				
Tyr	Ile	Asp	Lys	Asp	Val	Ala	Cys	Ala	Lys	Asn	Leu	Glu	Val	Gly	Val
65					70					75					80
Lys	Asn	Arg	Thr	Phe	Ile	Met	Glu	Val	Cys	Cys	Ile				
				85					90						

<210> 7074

<211> 147

<212> PRT

<213> B.fragilis

<400> 7074

Lys	Glu	Ile	Val	Met	Ser	Gln	Leu	Tyr	Phe	Ser	Ser	Lys	Lys	Arg	Asn
1				5					10					15	
Asn	Gly	Ser	Ile	Leu	Gln	Ile	Arg	Gly	His	Tyr	Tyr	Ala	Asn	Asn	Arg
			20					25					30		
Asn	Asp	Cys	Phe	Gln	Pro	Ile	Gly	Gln	Leu	Ser	Pro	Ile	Ser	Phe	Ser
		35					40					45			
Ala	Val	Lys	Gly	Asn	Gln	Leu	Leu	Ile	Thr	Leu	Asn	Val	Pro	Asp	Thr
	50					55					60				
Trp	Cys	Asp	Lys	Ala	Gly	Asp	Gly	Ala	Trp	Phe	Ala	Ile	Ser	Val	Asn
65					70					75					80
Asp	Glu	Ile	Lys	Ser	Arg	Gly	Val	Tyr	Tyr	Ser	Gly	Lys	Asp	Gly	Gln
				85				90					95		
Arg	Val	Pro	Ile	Thr	Leu	Gln	Thr	Val	Val	Asp	Val	Glu	Glu	Asp	His
			100					105					110		
Ser	Tyr	Ile	Ile	Lys	Gly	Leu	Trp	Cys	Asn	Glu	Ser	Gly	Thr	Glu	Asn
		115					120					125			
Arg	Asn	Cys	Asn	Ile	Gly	Glu	Phe	Ser	Glu	Thr	Val	Leu	Thr	Val	Leu
		130				135						140			
Val	Leu	Asp													
145															

<210> 7075

<211> 85

<212> PRT

<213> B.fragilis

<400> 7075

Gly	Ala	Phe	Phe	Lys	Ala	Leu	Leu	Tyr	Asp	Leu	Thr	Lys	Leu	Ser	
1			5					10					15		
Phe	Asn	Asn	Trp	Tyr	Ser	Cys	Leu	Leu	Glu	Glu	Leu	Pro	Val	Asn	
			20					25				30			
Ser	Pro	Arg	Asn	Tyr	Ser	Ile	Lys	Ile	Ser	Leu	His	Tyr	Glu	Glu	Gln
		35					40					45			
His	Ile	Thr	Ala	Val	Trp	Val	Tyr	Leu	Thr	Val	Lys	Phe	Glu	Glu	His
	50					55					60				
Trp	Lys	Pro	Val	Asp	Val	Glu	Val	Glu	Phe	Arg	Cys	Lys	Phe	Lys	Glu
65					70					75					80

Case	α	β	γ	δ	ϵ	ζ	η	θ	ι	κ	λ	μ	ν	ξ	\omicron	π	ρ	σ	τ	υ	ϕ	χ	ψ	ω
1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
3	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
4	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
5	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
6	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
7	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
8	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
9	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
10	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
11	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
12	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
13	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
14	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
15	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
16	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
17	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1													

<400> 7076

Leu 1	Tyr	Ala	Phe	Leu 5	Lys	Asn	Asn	Ile	Asn 10	Met	Leu	Asn	Val	Asp 15	Asn
Phe	Ile	Gly	Asp 20	His	Ile	Thr	Phe	Arg 25	Arg	Ser	Ser	Met	Phe 30	Ala	Pro
Asp	Ile	Ala	Ala 35	Asn	Ser	Asp	Arg 40	Leu	Arg	Gln	Glu	Val 45	Glu	Gly	Lys
Ser	Leu 50	Leu	Val	Ile	Gly	Gly 55	Ala	Gly	Ser	Ile 60	Gly	Ser	Ser	Tyr	Ile
Lys 65	Ala	Ile	Leu	Pro 70	Phe	Lys	Pro	Ser	Lys 75	Leu	Val	Val	Ile	Asp 80	Leu
Asn	Glu	Asn	Gly 85	Leu	Ala	Glu	Leu	Thr 90	Arg	Asp	Leu	Arg	Ser 95	Thr	Tyr
Gly	Leu	Tyr	Ile 100	Pro	Asp	Glu	Tyr	Arg 105	Thr	Tyr	Thr	Leu	Asn 110	Phe	Ala
Asp	Pro	Ile 115	Phe	Glu	Arg	Met	Phe 120	Arg	Lys	Glu	Gln	Gly 125	Phe	Asp	Ile
Val 130	Ala	Asn	Phe	Ser	Ala	His 135	Lys	His	Val	Arg	Ser 140	Glu	Lys	Asp	Glu
Tyr 145	Ser	Val	Gln	Ala 150	Leu	Ile	Glu	Asn	Asn 155	Val	Ile	Lys	Ala	Lys	Lys
Leu	Leu	Asp	Leu 165	Leu	Ser	Glu	Phe	Pro 170	Arg	His	Phe	Phe	Cys 175	Cys	Val
Ser	Thr	Asp 180	Lys	Ala	Ala	Asn	Pro 185	Val	Asn	Ile	Met	Gly 190	Ala	Ser	Lys
Arg	Ile	Met 195	Glu	Asp	Met	Ile 200	Met	Ala	Tyr	Ser	Ser 205	Lys	Phe	Lys	Val
Thr 210	Thr	Ala	Arg	Phe	Ala	Asn 215	Val	Ala	Phe	Ser 220	Asn	Gly	Ser	Leu	Leu
Ala 225	Gly	Phe	Ile	Asp 230	Arg	Ile	Met	Lys	Lys 235	Gln	Pro	Leu	Ala	Ala	Pro
Asn	Asp	Val	Lys 245	Arg	Tyr	Phe	Val	Ser 250	Pro	Glu	Glu	Ser	Gly 255	Gln	Ile
Cys	Met	Leu 260	Ala	Cys	Val	Leu	Gly 265	Asn	Asn	Gly	Glu	Ile 270	Phe	Phe	Pro
Lys	Leu	Gly 275	Glu	Glu	Lys	Met	Ile 280	Thr	Phe	Ser	Ser 285	Ile	Cys	Asp	Arg
Phe 290	Leu	Arg	Thr	Leu	Gly 295	Tyr	Glu	Lys	Lys 300	Glu	Cys	Ala	Thr	Asp	Glu
Glu 305	Ala	Arg	Arg	Tyr 310	Ala	Ala	Glu	Met	Ala 315	Asp	Asp	Ser	Lys	Ile	Tyr
Pro	Val	Val	Tyr 325	Phe	Lys	Ser	Asp	Thr 330	Thr	Gly	Glu	Lys	Gly 335	Tyr	Glu
Glu	Phe	Tyr 340	Val	Pro	Gly	Glu	Arg 345	Leu	Asn	Leu	Glu	Arg 350	Phe	Ser	Ser
Leu	Gly 355	Val	Ile	Glu	Asp	Val 360	Ser	Lys	Arg 365	Pro	Leu	Ser	Glu	Leu	Asp
Ser	Phe 370	Phe	Asp	Asp	Leu 375	Glu	Ser	Leu	Phe 380	Ala	Leu	Pro	Asp	Cys	His
Lys 385	Ser	Asp	Ile 390	Val	Thr	Ala	Leu 395	Lys	Arg 395	Phe	Leu	Pro	Asn	Phe	Glu

His Val Glu Lys Gly Lys Asn Leu Asp Gln Lys Met
405 410

<210> 7077

<211> 501

<212> PRT

<213> B.fragilis

<400> 7077

Met	Arg	Lys	Leu	Phe	Leu	Ile	Ser	Ile	Gly	Leu	Leu	Ile	Val	Ser	Thr
1				5					10					15	
Ser	Thr	Phe	Ala	Gly	Gly	Leu	Leu	Thr	Asn	Thr	Asn	Gln	His	Val	Leu
			20					25					30		
Phe	Leu	Arg	Met	Leu	Ala	Arg	Asp	Ala	Ser	Thr	Gln	Ile	Asp	Ala	Val
		35					40					45			
Tyr	Ser	Asn	Pro	Ala	Gly	Val	Ala	Phe	Met	Glu	Asn	Gly	Phe	His	Leu
	50					55					60				
Ser	Leu	Asn	Gly	Gln	Ser	Ala	Phe	Gln	Thr	Arg	Thr	Ile	Thr	Ser	Thr
65					70					75					80
Phe	Ala	Pro	Phe	Ala	Gly	Phe	Gly	Gly	Asn	Ala	Thr	Lys	Val	Tyr	Lys
				85					90					95	
Gly	Glu	Ala	Ser	Ala	Pro	Phe	Ile	Pro	Ser	Val	Phe	Ala	Val	Tyr	Lys
			100					105					110		
Lys	Asp	Lys	Trp	Ala	Phe	Ser	Gly	Asn	Phe	Ala	Val	Thr	Gly	Gly	Gly
		115					120					125			
Gly	Lys	Ala	Thr	Phe	Asn	Glu	Gly	Leu	Gly	Ser	Phe	Glu	Ser	Leu	Val
	130					135					140				
Ser	Val	Val	Pro	Gly	Met	Leu	Val	Ala	Ala	Gly	Asn	Glu	Met	Val	Asp
145					150					155					160
Lys	Gly	Val	Leu	Pro	Ile	Asn	Ile	Phe	Asn	Gly	Thr	Asn	Lys	Tyr	Ser
				165					170					175	
Val	Asp	Ser	Tyr	Met	Arg	Gly	Lys	Gln	Met	Ile	Phe	Gly	Leu	Gln	Leu
			180					185					190		
Gly	Ala	Thr	Tyr	Arg	Ile	Thr	Asp	Tyr	Leu	Ser	Ala	Phe	Ala	Gly	Val
		195					200					205			
Arg	Met	Asn	Tyr	Val	Ser	Asn	Gly	Tyr	Glu	Gly	His	Ile	Arg	Asn	Ile
	210					215					220				
Glu	Ala	Asn	Ile	Gly	Gly	Glu	Met	Val	Asn	Val	Asn	Lys	Tyr	Phe	
225					230				235					240	
Ser	Asp	Tyr	Ala	Lys	Gln	Ala	Arg	Thr	Ala	Ala	Asp	Ala	Tyr	Leu	Ala
				245					250					255	
Ala	Asn	Asp	Leu	Ala	Asn	Tyr	Ala	Lys	Tyr	Asp	Ala	Ile	Ala	Lys	Glu
			260					265					270		
Ala	Thr	Lys	Val	Ala	Gly	Leu	Thr	Ala	Asp	Lys	Glu	Leu	Asp	Cys	Asp
		275					280					285			
Gln	Thr	Gly	Trp	Gly	Val	Thr	Pro	Ile	Leu	Gly	Leu	Asp	Phe	Lys	Met
	290					295					300				
Asn	Lys	Trp	Asn	Ile	Gly	Val	Lys	Tyr	Glu	Phe	Asn	Thr	Lys	Leu	Asn
305					310					315					320
Val	Glu	Asn	Lys	Thr	Arg	Ile	Asp	Asn	Thr	Gly	Leu	Phe	Ala	Asn	Gly
			325						330					335	
Val	Asn	Thr	Pro	His	Asp	Ile	Pro	Ala	Leu	Leu	Thr	Val	Gly	Val	Ser
			340					345					350		
Tyr	Glu	Ile	Leu	Pro	Val	Leu	Arg	Ala	Ser	Val	Gly	Tyr	His	His	Phe
		355					360					365			
Phe	Asp	Thr	Asn	Ala	Arg	Met	Ala	Asp	Ala	Lys	Asp	Pro	Val	Thr	Gly
	370					375					380				
Gln	Thr	Met	Gly	Lys	Gln	His	Phe	Ile	Lys	Gln	Gly	Thr	Asn	Glu	Tyr
385					390					395					400

Leu Gly Gly Ile Glu Trp Asp Val Cys Lys Trp Ala Gln Val Ser Ala
 405 410 415
 Gly Met Gln Arg Thr Lys Tyr Gly Val Gly Asp Asn Tyr Gln Ser Asp
 420 425 430
 Met Ser Phe Ala Val Ser Ser Tyr Ser Tyr Gly Phe Gly Ala Gly Phe
 435 440 445
 Asp Ile Ala Lys Asn Leu Lys Leu Asn Val Ala Tyr Phe Trp Thr Asp
 450 455 460
 Tyr Asp Lys Tyr Thr Lys Glu Thr Pro Asn Tyr Gly Gly Thr Gly Ile
 465 470 475 480
 Ala Gly Lys Asp Val Phe Thr Arg Thr Asn Lys Val Phe Gly Ile Gly
 485 490 495
 Leu Asp Tyr Lys Phe
 500

<210> 7078

<211> 406

<212> PRT

<213> B.fragilis

<400> 7078

Lys Ile Pro Ser Gln Phe Arg Thr Arg Gly Glu Arg Lys Glu Ser Gly
 1 5 10 15
 Ser Glu Asn Val Met Phe Thr Ser Met Tyr Asn Asn Ile Thr Thr Phe
 20 25 30
 Ile His Asn Leu Phe Gly Thr Asp Glu Phe Val Pro Leu His Ala Pro
 35 40 45
 Leu Phe Ile Gly Asn Glu Lys Lys Tyr Leu Ala Glu Cys Ile Asp Thr
 50 55 60
 Thr Phe Val Ser Ser Val Gly Lys Phe Val Asp Arg Phe Glu Glu Gln
 65 70 75 80
 Val Ala Ser Tyr Thr Gly Ser Lys Arg Ala Val Val Cys Val Ser Gly
 85 90 95
 Thr Asn Ala Leu His Met Gly Met Leu Leu Val Gly Val Glu Arg Asp
 100 105 110
 Asp Glu Val Leu Thr Gln Ala Leu Thr Phe Ile Ala Thr Cys Asn Ala
 115 120 125
 Ile Ser Tyr Ile Gly Ala His Pro Val Phe Leu Asp Val Asp Arg Asp
 130 135 140
 Thr Leu Gly Leu Ser Pro Leu Ala Val Lys Arg Trp Leu Ser Gly His
 145 150 155 160
 Ala Glu Val Arg Asn Gly Gln Cys Tyr Asn Lys Lys Thr Gly Arg Arg
 165 170 175
 Ile Lys Ala Cys Val Pro Met His Thr Phe Gly His Pro Met Lys Ile
 180 185 190
 Asp Glu Leu Ser Ala Val Cys Asn Glu Tyr His Ile Glu Leu Val Glu
 195 200 205
 Asp Ala Ala Glu Ser Ile Gly Ser Phe Tyr Lys Gly Arg His Thr Gly
 210 215 220
 Thr Phe Gly Arg Val Gly Ala Ile Ser Phe Asn Gly Asn Lys Thr Ile
 225 230 235 240
 Thr Thr Gly Gly Gly Gly Met Leu Leu Phe Gln Asp Glu Glu Leu Gly
 245 250 255
 Lys Phe Ala Lys His Leu Thr Thr Gln Ala Lys Val Pro His Arg Trp
 260 265 270
 Ala Phe Val His Asp His Ile Gly Tyr Asn Tyr Arg Met Pro Asn Ile
 275 280 285
 Asn Ala Ala Leu Gly Cys Ala Gln Met Glu Asn Leu Asp Arg Tyr Val
 290 295 300

Ser Asn Lys Arg Glu Thr Ala Glu Arg Tyr Arg Glu Phe Phe Ser Arg
 305 310 315 320
 Ile Pro Asp Val Glu Phe Val Val Glu Pro Ala Asn Ser Arg Ser Asn
 325 330 335
 Tyr Trp Leu Asn Ala Val Leu Leu Lys Asp Arg Arg Ala Gln Gln Ser
 340 345 350
 Phe Leu Glu Tyr Thr Asn Asp His Gly Val Met Thr Arg Pro Val Trp
 355 360 365
 Glu Leu Met Asn Arg Leu Glu Met Phe Arg Gly Cys Glu Thr Asp Gly
 370 375 380
 Leu Glu Asn Thr Val Trp Leu Glu Glu Arg Ile Val Asn Ile Pro Ser
 385 390 395 400
 Ser Val Arg Leu Gly Val
 405

<210> 7079
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 7079
 Leu Leu Arg Thr Glu Glu Leu Val Leu Lys Lys Tyr Leu Glu Asp Lys
 1 5 10 15
 Glu Gly Asp Met Ser Thr Ile Lys Ile Lys Gln Val Lys Ser Arg Ile
 20 25 30
 Gly Ala Pro Ala Asp Gln Lys Arg Thr Leu Asp Ala Leu Gly Leu Arg
 35 40 45
 Lys Leu Asn Arg Val Val Glu His Glu Ser Thr Pro Ser Ile Leu Gly
 50 55 60
 Met Val Asp Lys Val Lys His Leu Val Ala Ile Val Lys
 65 70 75

<210> 7080
 <211> 113
 <212> PRT
 <213> B.fragilis

<400> 7080
 Arg Leu Leu Thr Val Arg Val Val Ile Leu Val Ser Ser Arg Leu Glu
 1 5 10 15
 Thr Val Trp Val Thr Met Leu Lys Cys Ala Ser Ser Asn Ser Leu Thr
 20 25 30
 Thr Thr Lys Thr Trp Leu Lys Arg Lys Leu Leu Arg Lys Gln Leu Val
 35 40 45
 Leu Val Val Gln Arg Lys Leu Leu Lys Leu Leu Leu Leu Pro Lys Tyr
 50 55 60
 Leu Gln Leu Lys Asn Arg Lys Leu Asn Gln Gln Asn Asn Ser Thr Ile
 65 70 75 80
 Ile Leu Ile Asp Ile Lys Lys Ala Ala Leu Lys Arg Val Ala Phe Phe
 85 90 95
 Val Asp Phe Thr Lys Asp Thr Leu Lys Thr Phe Glu Gly Glu Gln Ser
 100 105 110
 Asp

<210> 7081
 <211> 616
 <212> PRT
 <213> B.fragilis

<400> 7081

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Ile Tyr Tyr Phe Cys Gly Ser Asn Asn Gln Gly Asn Met Glu Gln Leu
1      5      10      15
Asn Leu Ile Ile Asp Thr Tyr Gln Arg Ile Ile Leu Glu Ser Glu Ser
20      25      30
Lys Leu Ala Lys Val Lys Gln His Ile Tyr Arg Ile Gly Thr Leu Arg
35      40      45
Leu Ile Leu Phe Ala Ala Gly Ile Ala Gly Ile Ile Tyr Phe Trp Asp
50      55      60
Glu Gly Arg Leu Val Ile Gly Gly Ile Ala Ala Ile Thr Phe Ile Pro
65      70      75      80
Phe Ile Leu Leu Val Lys Leu His Asn Arg Leu Phe His Gln Lys Asp
85      90      95
Tyr Leu Glu Lys Lys Ile Glu Ile Asn Arg Gln Glu Leu Gln Ala Leu
100     105     110
Thr Tyr Asp Thr Ser Ala Phe Asp Asn Gly Glu Glu Phe Ile Asn Pro
115     120     125
Ser His Leu Tyr Thr Tyr Asp Leu Asp Val Phe Gly Glu His Ser Leu
130     135     140
Phe Gln Tyr Ile Asn Arg Thr Ala Thr Gln Pro Gly Lys Lys Arg Leu
145     150     155     160
Ala Glu Trp Met Asn Met His Leu Lys Ser Lys Ala Glu Ile Glu Lys
165     170     175
Arg Gln Glu Ala Val Arg Glu Leu Ala Pro Glu Leu Glu Met Arg Gln
180     185     190
His Phe Arg Val Leu Gly Leu Leu His Lys Gly Lys Thr Ala Asp Glu
195     200     205
Glu Glu Ile Arg Asn Trp Ala Ser Ser Pro Glu Tyr Tyr Arg Lys Lys
210     215     220
Trp Tyr Phe Arg Thr Leu Ala Ile Leu Ile Pro Thr Ala Asn Ala Val
225     230     235     240
Cys Ile Gly Leu Ala Ile Ala Gly Ile Ile Ser Phe Thr Thr Trp Gly
245     250     255
Ile Val Phe Ala Ser Ile Gly Leu Phe Ser Ser Ser Phe Ser Lys Gly
260     265     270
Ile Ser Arg Met Gln Ser Val Tyr Gly Lys Lys Met Leu Ile Leu Thr
275     280     285
Thr Tyr Ala Arg Leu Ile His Ile Ile Glu Glu Lys Lys Met Arg Cys
290     295     300
Ser Ala Leu Lys Glu Ile Lys Glu Leu Val Gly Gly Glu Lys Gln Thr
305     310     315     320
Ala Ser Gln Ala Val Lys Arg Leu Thr Glu Leu Met Asn Ala Leu Asp
325     330     335
Gln Arg Asn Asn Met Leu Met Gln Phe Val Leu Asn Gly Leu Phe Phe
340     345     350
Trp Glu Leu Arg Gln Val Met Lys Ile Glu Ala Trp Lys Glu Asn Tyr
355     360     365
Ala Ala His Leu Pro Asp Trp Leu Glu Ala Ile Gly Glu Met Asp Ala
370     375     380
Tyr Cys Ser Leu Ala Cys Phe Ala Tyr Asn His Pro Gly Tyr Val Phe
385     390     395     400
Pro Glu Ile Ala Ser Lys Pro Phe Cys Val Glu Ala Glu Ala Leu Gly
405     410     415
His Pro Leu Met Asn Arg Asn Lys Cys Val Arg Asn Asp Ile Arg Ile
420     425     430
Ala Lys Arg Pro Phe Phe Ile Ile Ile Thr Gly Ala Asn Met Ala Gly
435     440     445
Lys Ser Thr Tyr Leu Arg Thr Ile Gly Val Ser Tyr Leu Leu Ala Cys

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450		455		460
Ile Gly Ala Pro Val Trp	Ala Glu Lys Met Lys	Leu Tyr Pro Ala Gln		
465	470	475	480	
Leu Val Thr Ser Leu Arg Thr Thr Asp Ser	Leu Ala Asp Asn Glu Ser			
	485	490	495	
Tyr Phe Phe Ala Glu Leu Lys Arg Leu Lys Leu	Ile Ile Asp Lys Leu			
	500	505	510	
Asn Ser Gly Glu Glu Leu Phe Ile Leu Asp Glu	Ile Leu Lys Gly			
	515	520	525	
Thr Asn Ser Met Asp Lys Gln Lys Gly Ser Phe	Ala Leu Ile Lys Gln			
	530	535	540	
Phe Met Ala Leu Gln Ala Asn Gly Ile Ile Ala	Thr His Asp Leu Leu			
545	550	555	560	
Leu Gly Ser Leu Ile Asp Leu Phe Pro Lys Asp	Ile His Asn Tyr Cys			
	565	570	575	
Phe Glu Ala Asp Ile Thr Asn Asn Glu Leu Thr	Phe Ser Tyr Lys Leu			
	580	585	590	
Arg Asp Gly Ile Ala Gln Asn Met Asn Ala Cys	Phe Leu Met Lys Lys			
	595	600	605	
Met Gly Ile Ala Val Ile Asp Asp				
610	615			

<210> 7082
 <211> 193
 <212> PRT
 <213> B.fragilis

<400> 7082

Glu Asp Lys Ala Met Ser Arg Ile Gly Lys Leu Pro Ile Ser Ile Pro				
1	5	10	15	
Ala Gly Val Thr Val Thr Leu Lys Asp Asp Val Val Thr Val Lys Gly				
	20	25	30	
Pro Lys Gly Glu Leu Ser Gln Tyr Val Asn Pro Ala Ile Asn Val Ala				
	35	40	45	
Ile Glu Asp Gly His Ile Thr Leu Thr Glu Asn Glu Asn Ala Met Leu				
50	55	60		
Asp Asn Pro Lys Gln Lys His Ala Phe His Gly Leu Tyr Arg Ser Leu				
65	70	75	80	
Val His Asn Met Val Val Gly Val Ser Glu Gly Tyr Lys Lys Glu Leu				
	85	90	95	
Glu Leu Val Gly Val Gly Tyr Arg Ala Ser Asn Gln Gly Asn Ile Ile				
	100	105	110	
Glu Leu Ala Leu Gly Tyr Thr His Asn Ile Phe Ile Gln Leu Pro Pro				
	115	120	125	
Glu Val Lys Val Glu Thr Lys Ser Glu Arg Asn Lys Asn Pro Leu Ile				
	130	135	140	
Leu Leu Glu Ser Cys Asp Lys Gln Leu Leu Gly Gln Val Cys Ser Lys				
145	150	155	160	
Ile Arg Ser Phe Arg Lys Pro Glu Pro Tyr Lys Gly Lys Gly Ile Lys				
	165	170	175	
Phe Val Gly Glu Ile Arg Arg Lys Ser Gly Lys Ser Ala Gly Ala				
	180	185	190	

Lys

<210> 7083
 <211> 203
 <212> PRT
 <213> B.fragilis

<400> 7083

Lys Glu Met Ala Arg Tyr Pro Gly Pro Lys Ser Arg Ile Ala Arg Lys
 1 5 10 15
 Phe Gly Glu Gly Ile Phe Gly Ala Asp Lys Val Leu Ser Lys Lys Asn
 20 25 30
 Tyr Pro Pro Gly Gln His Gly Asn Ser Arg Lys Arg Lys Thr Ser Glu
 35 40 45
 Tyr Gly Ile Gln Leu Arg Glu Lys Gln Lys Ala Lys Tyr Thr Tyr Gly
 50 55 60
 Val Leu Glu Lys Gln Phe Arg Asn Leu Phe Glu Lys Ala Ala Thr Ala
 65 70 75 80
 Lys Gly Ile Thr Gly Glu Val Leu Leu Gln Met Leu Glu Gly Arg Leu
 85 90 95
 Asp Asn Ile Val Phe Arg Leu Gly Ile Ala Pro Thr Arg Ala Ala Ala
 100 105 110
 Arg Gln Leu Val Gly His Lys His Ile Thr Val Asp Gly Gln Val Val
 115 120 125
 Asn Ile Pro Ser Tyr Ala Val Lys Pro Gly Gln Leu Ile Gly Val Arg
 130 135 140
 Glu Arg Ser Lys Ser Leu Glu Val Ile Ala Asn Ser Leu Ala Gly Phe
 145 150 155 160
 Asn His Ser Lys Tyr Ala Trp Leu Glu Trp Asp Glu Ala Ser Lys Val
 165 170 175
 Gly Lys Leu Leu His Ile Pro Glu Arg Ala Asp Ile Pro Glu Asn Ile
 180 185 190
 Lys Glu His Leu Ile Val Glu Leu Tyr Ser Lys
 195 200

<210> 7084

<211> 162

<212> PRT

<213> B.fragilis

<400> 7084

Lys Met Arg His Asn Lys Lys Phe Asn His Leu Gly Arg Thr Ala Ser
 1 5 10 15
 His Arg Ser Ala Met Leu Ser Asn Met Ala Cys Ser Leu Ile Lys His
 20 25 30
 Lys Arg Ile Thr Thr Thr Val Ala Lys Ala Lys Ala Leu Lys Lys Phe
 35 40 45
 Val Glu Pro Leu Ile Thr Lys Ser Lys Glu Asp Thr Thr Asn Ser Arg
 50 55 60
 Arg Val Val Phe Ser Asn Leu Gln Asp Lys Leu Ala Val Thr Glu Leu
 65 70 75 80
 Phe Lys Glu Ile Ser Val Lys Ile Ala Asp Arg Pro Gly Gly Tyr Thr
 85 90 95
 Arg Ile Ile Lys Thr Gly Asn Arg Leu Gly Asp Asn Ala Glu Met Cys
 100 105 110
 Phe Ile Glu Leu Val Asp Tyr Asn Glu Asn Met Ala Lys Glu Lys Val
 115 120 125
 Ala Lys Lys Ala Thr Arg Thr Arg Arg Ser Lys Lys Thr Thr Glu Ala
 130 135 140
 Ala Pro Ala Ala Glu Val Pro Ala Thr Glu Glu Pro Lys Ala Glu Ser
 145 150 155 160
 Ala Glu

<210> 7085

<211> 335
 <212> PRT
 <213> B.fragilis

<400> 7085

Ile	Ile	Ile	Asn	Phe	Met	Ala	Ile	Leu	Ala	Phe	Gln	Lys	Pro	Asp	Lys
1			5						10					15	
Val	Leu	Met	Leu	Glu	Ala	Asp	Ala	Lys	Phe	Gly	Lys	Phe	Glu	Phe	Arg
			20					25					30		
Pro	Leu	Glu	Pro	Gly	Phe	Gly	Ile	Thr	Val	Gly	Asn	Ala	Leu	Arg	Arg
		35					40					45			
Ile	Leu	Leu	Ser	Ser	Leu	Glu	Gly	Phe	Ala	Ile	Thr	Thr	Ile	Arg	Ile
	50					55					60				
Glu	Gly	Val	Glu	His	Glu	Phe	Ser	Ser	Val	Pro	Gly	Val	Lys	Glu	Asp
65				70					75					80	
Val	Thr	Asn	Ile	Ile	Leu	Asn	Leu	Lys	Gln	Val	Arg	Phe	Lys	Gln	Val
			85						90					95	
Val	Glu	Glu	Phe	Glu	Ser	Glu	Lys	Val	Ser	Ile	Thr	Ile	Glu	Asn	Ser
			100					105					110		
Ser	Glu	Phe	Lys	Ala	Gly	Asp	Ile	Gly	Lys	Tyr	Leu	Thr	Gly	Phe	Glu
		115					120					125			
Val	Leu	Asn	Pro	Glu	Leu	Val	Ile	Cys	His	Leu	Asp	Ser	Lys	Ala	Thr
	130					135					140				
Met	Gln	Ile	Asp	Ile	Thr	Ile	Asn	Lys	Gly	Arg	Gly	Tyr	Val	Pro	Ala
145				150						155					160
Asp	Glu	Asn	Arg	Glu	Tyr	Cys	Thr	Asp	Val	Asn	Val	Ile	Pro	Ile	Asp
			165						170					175	
Ser	Ile	Tyr	Thr	Pro	Ile	Arg	Asn	Val	Lys	Tyr	Ala	Val	Glu	Asn	Phe
			180					185					190		
Arg	Val	Glu	Gln	Lys	Thr	Asp	Tyr	Glu	Lys	Leu	Val	Leu	Glu	Ile	Thr
		195					200					205			
Thr	Asp	Gly	Ser	Ile	His	Pro	Lys	Glu	Ala	Leu	Lys	Glu	Ala	Ala	Lys
	210					215						220			
Ile	Leu	Ile	Tyr	His	Phe	Met	Leu	Phe	Ser	Asp	Glu	Lys	Ile	Thr	Leu
225				230						235					240
Glu	Ser	Asn	Asp	Val	Asp	Gly	Asn	Glu	Glu	Phe	Asp	Glu	Glu	Val	Leu
			245						250					255	
His	Met	Arg	Gln	Leu	Leu	Lys	Thr	Lys	Leu	Val	Asp	Met	Asp	Leu	Ser
			260					265					270		
Val	Arg	Ala	Leu	Asn	Cys	Leu	Lys	Ala	Ala	Asp	Val	Glu	Thr	Leu	Gly
		275					280					285			
Asp	Leu	Val	Gln	Phe	Asn	Lys	Thr	Asp	Leu	Leu	Lys	Phe	Arg	Asn	Phe
	290					295					300				
Gly	Lys	Lys	Ser	Leu	Thr	Glu	Leu	Asp	Asp	Leu	Leu	Glu	Ser	Leu	Asn
305				310					315						320
Leu	Ser	Phe	Gly	Thr	Asp	Ile	Ser	Lys	Tyr	Lys	Leu	Asp	Lys	Glu	
			325						330					335	

<210> 7086
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 7086

Ile	Tyr	Cys	Leu	Asn	Ile	Val	Arg	Val	Val	Leu	Ile	Asn	Leu	Ile	Ile
1				5					10					15	
Phe	Tyr	Met	Thr	Asp	Pro	Ile	Ala	Asp	Tyr	Leu	Thr	Arg	Leu	Arg	Asn
			20					25					30		
Ala	Ile	Asn	Ala	Lys	His	Arg	Val	Val	Glu	Val	Pro	Ala	Ser	Asn	Leu

35 40 45
 Lys Lys Glu Ile Thr Lys Ile Leu Phe Glu Lys Gly Tyr Ile Leu Asn
 50 55 60
 Tyr Lys Phe Val Glu Asp Gly Pro Gln Gly Thr Ile Lys Val Ala Leu
 65 70 75 80
 Lys Tyr Asp Ser Val Asn Lys Val Asn Ala Ile Lys Lys Leu Glu Arg
 85 90 95
 Ile Ser Ser Pro Gly Met Arg Gln Tyr Thr Gly Tyr Lys Asp Met Pro
 100 105 110
 Arg Val Ile Asn Gly Leu Gly Ile Ala Ile Ile Ser Thr Ser Lys Gly
 115 120 125
 Val Met Thr Asn Lys Glu Ala Ala Glu Leu Lys Ile Gly Gly Glu Val
 130 135 140
 Leu Cys Tyr Val Tyr
 145

<210> 7087
 <211> 186
 <212> PRT
 <213> B.fragilis

<400> 7087
 Val Met Ser Asn Thr Ala Ser Leu Lys Lys Glu Tyr Ala Glu Arg Ile
 1 5 10 15
 Ala Pro Ala Leu Lys Ser Gln Phe Gln Tyr Ser Ser Thr Met Gln Ile
 20 25 30
 Pro Val Leu Lys Lys Ile Val Ile Asn Gln Gly Leu Gly Met Ala Val
 35 40 45
 Ala Asp Lys Lys Ile Ile Glu Val Ala Ile Asn Glu Met Thr Ala Ile
 50 55 60
 Thr Gly Gln Lys Ala Val Ala Thr Ile Ser Arg Lys Asp Ile Ala Asn
 65 70 75 80
 Phe Lys Leu Arg Lys Lys Met Pro Ile Gly Val Met Val Thr Leu Arg
 85 90 95
 Arg Glu Arg Met Tyr Glu Phe Leu Glu Lys Leu Val Arg Val Ala Leu
 100 105 110
 Pro Arg Ile Arg Asp Phe Lys Gly Ile Glu Thr Lys Phe Asp Gly Lys
 115 120 125
 Gly Asn Tyr Thr Leu Gly Ile Gln Glu Gln Ile Ile Phe Pro Glu Ile
 130 135 140
 Asn Ile Asp Ser Ile Thr Arg Ile Leu Gly Met Asn Ile Thr Phe Val
 145 150 155 160
 Thr Ser Ala Gln Thr Asp Glu Glu Gly Tyr Ala Leu Leu Lys Glu Phe
 165 170 175
 Gly Leu Pro Phe Lys Asn Ala Lys Lys Asp
 180 185

<210> 7088
 <211> 100
 <212> PRT
 <213> B.fragilis

<400> 7088
 Ile Met Ala Lys Glu Ser Met Lys Ala Arg Glu Ile Lys Arg Ala Lys
 1 5 10 15
 Leu Val Ala Lys Tyr Ala Glu Lys Arg Ala Ala Leu Lys Gln Ile Val
 20 25 30
 Arg Thr Gly Asp Pro Ala Glu Ala Phe Glu Ala Ala Gln Lys Leu Gln
 35 40 45

Glu Leu Pro Lys Asn Ser Asn Pro Ile Arg Met His Asn Arg Cys Lys
 50 55 60
 Leu Thr Gly Arg Pro Lys Gly Tyr Ile Arg Gln Phe Gly Val Ser Arg
 65 70 75 80
 Ile Gln Phe Arg Glu Met Ala Ser Asn Gly Leu Ile Pro Gly Val Lys
 85 90 95
 Lys Ala Ser Trp
 100

<210> 7089
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 7089
 Tyr Met Ala Lys Gln Ser Ala Ile Glu Gln Asp Gly Val Ile Val Glu
 1 5 10 15
 Ala Leu Ser Asn Ala Met Phe Arg Val Glu Leu Glu Asn Gly His Glu
 20 25 30
 Ile Thr Ala His Ile Ser Gly Lys Met Arg Met His Tyr Ile Lys Ile
 35 40 45
 Leu Pro Gly Asp Lys Val Arg Val Glu Met Ser Pro Tyr Asp Leu Ser
 50 55 60
 Lys Gly Arg Ile Val Phe Arg Tyr Lys
 65 70

<210> 7090
 <211> 158
 <212> PRT
 <213> B.fragilis

<400> 7090
 Leu Phe Val Glu Tyr Lys Thr Asn Tyr Asn Met Asn Leu Ser Asn Leu
 1 5 10 15
 Lys Pro Ala Glu Gly Ser Thr Lys Thr Arg Lys Arg Ile Gly Arg Gly
 20 25 30
 Pro Gly Ser Gly Leu Gly Gly Thr Ser Thr Arg Gly His Lys Gly Ala
 35 40 45
 Lys Ser Arg Ser Gly Tyr Ser Lys Lys Ile Gly Phe Glu Gly Gly Gln
 50 55 60
 Met Pro Leu Gln Arg Arg Val Pro Lys Phe Gly Phe Lys Asn Ile Asn
 65 70 75 80
 Arg Ile Glu Tyr Lys Ala Ile Asn Leu Glu Thr Ile Gln Lys Leu Ala
 85 90 95
 Glu Ala Lys Lys Leu Glu Lys Val Gly Val Asn Asp Phe Ile Glu Ala
 100 105 110
 Gly Phe Ile Ser Ser Ser Gln Leu Val Lys Val Leu Gly Asn Gly Thr
 115 120 125
 Leu Thr Ala Lys Leu Ser Val Glu Ala His Ala Phe Ser Lys Ser Ala
 130 135 140
 Val Ala Ala Ile Glu Ala Ala Gly Gly Asn Val Val Lys Leu
 145 150 155

<210> 7091
 <211> 148
 <212> PRT
 <213> B.fragilis

<400> 7091

Thr Val Gly Leu Asn Asn Leu Leu Tyr Leu Gln Ala Asp Met Ala Lys
 1 5 10 15
 Phe Ile Lys Ile Ile Leu Phe Met Leu Phe Ala Val Ala Leu His Ser
 20 25 30
 Val Ala Asn Asp Tyr Phe Ala Glu Lys Gln Ala Glu Gln Asp Ile Tyr
 35 40 45
 Met Ala Met Ser Thr Met Lys Gly Asp Thr His Glu Thr Val Ser Ser
 50 55 60
 Pro Gln Thr Pro Tyr Phe Pro Asp Ala Glu Leu Ala Gly Thr Gly Ile
 65 70 75 80
 Gln Thr His Gln Ile Ala Met Ser Arg Ile Gln Arg Ile Gln Ala Ala
 85 90 95
 Glu Ser Ile Phe Ser Leu Lys Ala Leu Ala Gln Arg Leu Ala Asp Arg
 100 105 110
 Asp Ala Val Leu Ser Gln His Trp Gly Lys Leu Tyr Glu Thr Thr Thr
 115 120 125
 Ser Tyr Trp Trp His Pro Val Ser Glu Tyr Tyr Val Phe Ala Leu Arg
 130 135 140
 Arg Ile Ile Val
 145

<210> 7092

<211> 118

<212> PRT

<213> B.fragilis

<400> 7092

Ile Cys Ile Ile Met Thr Thr Lys Ile Glu Arg Arg Ile Lys Ile Lys
 1 5 10 15
 Tyr Arg Val Arg Asn Lys Val Ser Gly Thr Ala Ala Arg Pro Arg Met
 20 25 30
 Ser Val Phe Arg Ser Asn Lys Gln Ile Tyr Val Gln Ile Ile Asp Asp
 35 40 45
 Leu Ser Gly Lys Thr Leu Ala Ala Ala Ser Ser Leu Gly Met Thr Glu
 50 55 60
 Lys Leu Pro Lys Lys Glu Val Ala Ala Lys Val Gly Glu Ile Ile Ala
 65 70 75 80
 Lys Lys Ala Gln Glu Ala Gly Ile Thr Thr Val Val Phe Asp Arg Asn
 85 90 95
 Gly Tyr Leu Tyr His Gly Arg Val Lys Glu Val Ala Asp Ala Ala Arg
 100 105 110
 Asn Gly Gly Leu Lys Phe
 115

<210> 7093

<211> 127

<212> PRT

<213> B.fragilis

<400> 7093

Tyr Met Ala Ile Arg Ile Val Gly Val Asp Leu Pro Gln Asn Lys Arg
 1 5 10 15
 Gly Glu Ile Ala Leu Thr Tyr Val Tyr Gly Ile Gly Arg Ser Ser Ser
 20 25 30
 Ala Lys Ile Leu Asp Lys Ala Gly Val Asp Lys Asp Leu Lys Val Lys
 35 40 45
 Asp Trp Thr Asp Asp Gln Ala Ala Lys Ile Arg Glu Ile Ile Gly Ala
 50 55 60
 Glu Tyr Lys Val Glu Gly Asp Leu Arg Ser Glu Val Gln Leu Asn Ile

65					70					75				80	
Lys	Arg	Leu	Met	Asp	Ile	Gly	Cys	Tyr	Arg	Gly	Val	Arg	His	Arg	Ile
				85					90					95	
Gly	Leu	Pro	Val	Arg	Gly	Gln	Ser	Thr	Lys	Asn	Asn	Ala	Arg	Thr	Arg
			100					105						110	
Lys	Gly	Arg	Lys	Lys	Thr	Val	Ala	Asn	Lys	Lys	Lys	Ala	Thr	Lys	
		115					120					125			

<210> 7094
 <211> 176
 <212> PRT
 <213> B.fragilis

<400> 7094															
Ile	Leu	Ile	Ile	Met	Ala	Gly	Val	Asn	Asn	Arg	Val	Lys	Ile	Thr	Asn
1				5				10					15		
Asp	Ile	Glu	Leu	Lys	Asp	Arg	Leu	Val	Ala	Ile	Asn	Arg	Val	Thr	Lys
			20					25					30		
Val	Thr	Lys	Gly	Gly	Arg	Thr	Phe	Ser	Phe	Ser	Ala	Ile	Val	Val	Val
		35					40					45			
Gly	Asn	Glu	Glu	Gly	Ile	Ile	Gly	Trp	Gly	Leu	Gly	Lys	Ala	Gly	Glu
	50					55					60				
Val	Thr	Ala	Ala	Ile	Ala	Lys	Gly	Val	Glu	Ser	Ala	Lys	Lys	Asn	Leu
65					70				75						80
Thr	Arg	Val	Pro	Val	Leu	Lys	Gly	Thr	Val	Pro	His	Glu	Gln	Ser	Ala
				85					90					95	
Lys	Phe	Gly	Gly	Ala	Glu	Val	Phe	Ile	Lys	Pro	Ala	Ser	His	Gly	Thr
			100					105					110		
Gly	Val	Val	Ala	Gly	Gly	Ala	Met	Arg	Ala	Val	Leu	Glu	Ser	Val	Gly
		115					120					125			
Val	Thr	Asp	Val	Leu	Ala	Lys	Ser	Lys	Gly	Ser	Ser	Asn	Pro	His	Asn
	130					135						140			
Leu	Val	Lys	Ala	Thr	Ile	Met	Ala	Leu	Gly	Glu	Met	Arg	Asp	Ala	Arg
145					150					155					160
Met	Ile	Ala	Gln	Asn	Arg	Gly	Ile	Ser	Val	Glu	Lys	Val	Phe	Arg	Gly
				165					170					175	

<210> 7095
 <211> 267
 <212> PRT
 <213> B.fragilis

<400> 7095															
Val	Glu	Met	Ile	Phe	Leu	Lys	Thr	Glu	Asp	Glu	Ile	Glu	Leu	Leu	Arg
1				5				10					15		
Gln	Ser	Asn	Leu	Leu	Val	Gly	Arg	Thr	Leu	Ala	Glu	Val	Ala	Lys	Leu
			20					25					30		
Val	Lys	Pro	Gly	Val	Thr	Thr	Lys	Glu	Leu	Asp	Lys	Val	Ala	Glu	Glu
		35					40					45			
Phe	Ile	Arg	Asp	His	Gly	Ala	Val	Pro	Thr	Phe	Lys	Gly	Phe	Pro	Asn
	50					55					60				
Gln	Tyr	Gly	Asp	Pro	Phe	Pro	Ala	Ser	Leu	Cys	Thr	Ser	Val	Asn	Glu
65					70					75					80
Gln	Val	Val	His	Gly	Ile	Pro	Gly	Asp	Ile	Val	Leu	Lys	Asp	Gly	Asp
			85					90						95	
Ile	Val	Ser	Val	Asp	Cys	Gly	Thr	Tyr	Met	Asn	Gly	Phe	Cys	Gly	Asp
			100					105					110		
Ser	Ala	Tyr	Thr	Phe	Cys	Val	Gly	Glu	Val	Asp	Glu	Glu	Val	Arg	Gln
		115					120					125			

Leu Leu Lys Val Thr Lys Glu Ala Leu Tyr Ile Gly Ile Gln Asn Ala
 130 135 140
 Val Gln Gly Lys Arg Ile Gly Asp Ile Gly Tyr Ala Ile Gln Gln Tyr
 145 150 155 160
 Cys Glu Ser His Ser Tyr Gly Val Val Arg Glu Phe Val Gly His Gly
 165 170 175
 Ile Gly Lys Asp Met His Glu Asp Pro Gln Val Pro Asn Tyr Gly Lys
 180 185 190
 Arg Gly Tyr Gly Thr Leu Leu Lys Gly Leu Cys Ile Ala Ile Glu
 195 200 205
 Pro Met Ile Thr Gln Gly Asp Arg Gln Val Ile Met Glu Arg Asp Gly
 210 215 220
 Trp Thr Val Arg Thr Arg Asp Arg Lys Cys Ala Ala His Phe Glu His
 225 230 235 240
 Thr Ile Ala Val Gly Ala Gly Glu Ala Asp Ile Leu Ser Ser Phe Lys
 245 250 255
 Phe Ile Glu Glu Val Leu Gly Asp Lys Ala Ile
 260 265

<210> 7096

<211> 215

<212> PRT

<213> B.fragilis

<400> 7096

Glu Phe Asn Leu Leu Val Leu Leu Leu Phe Tyr Val Ala Val Pro Gly
 1 5 10 15
 Ser Tyr Arg Cys Gly Ser Ile Tyr Gln Leu Leu Phe Thr Asn Asn Leu
 20 25 30
 Asn Phe Asn Ile Met Thr Thr Gln Ala Ile Asp Ala Thr Ile Phe Ala
 35 40 45
 Ser Ser His Pro Asp Ile Ala Lys Arg Thr Ser Val Ser Gly Leu Ile
 50 55 60
 Phe Ser Cys Ile Met Leu Leu Ala Gly Val Ile Ala Phe Val Ser Thr
 65 70 75 80
 Phe Glu Met Lys Asp Arg Ser Ser Thr Ile Ser Met Gly Leu Met Val
 85 90 95
 Leu Gly Thr Ala Leu Phe Leu Ile Gly Val Phe Arg Leu Phe Trp Lys
 100 105 110
 Ser Lys Glu Ile Val Tyr Leu Pro Thr Gly Ser Val Ala Lys Glu Gln
 115 120 125
 Ser Ile Phe Phe Asp Leu Lys His Leu Asp Glu Leu Thr Asp Met Val
 130 135 140
 Lys Ser Gly Asp Phe Ser Met Gln Ser Thr Ala Lys Gly Gly Thr Ser
 145 150 155 160
 Gly Asn Leu Arg Leu Asp Val Met Leu Ser Glu Asp Arg Lys Phe Ala
 165 170 175
 Ala Val Gln Leu Phe Gln Phe Val Pro Tyr Thr Tyr Asn Pro Val Thr
 180 185 190
 Ser Val Arg Tyr Phe Thr Asn Gly Glu Ala Ala Ser Ile Ala Ala Phe
 195 200 205
 Leu Thr Lys Thr Lys Gly His
 210 215

<210> 7097

<211> 134

<212> PRT

<213> B.fragilis

<400> 7097

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Ile Ile Ile Val Asp Met Ala Lys Lys Thr Val Ala Ala Lys Lys Arg
1           5           10           15
Asn Val Lys Val Asp Ala Asn Gly Gln Leu His Val His Ser Ser Phe
          20           25           30
Asn Asn Ile Ile Val Ser Leu Ala Asn Ser Glu Gly Gln Ile Ile Ser
          35           40           45
Trp Ser Ser Ala Gly Lys Met Gly Phe Arg Gly Ser Lys Lys Asn Thr
          50           55           60
Pro Tyr Ala Ala Gln Met Ala Ala Gln Asp Cys Ala Lys Ile Ala Phe
65           70           75           80
Asp Leu Gly Leu Arg Lys Val Lys Ala Tyr Val Lys Gly Pro Gly Asn
          85           90           95
Gly Arg Glu Ser Ala Ile Arg Thr Ile His Gly Ala Gly Ile Glu Val
          100          105          110
Thr Glu Ile Ile Asp Val Thr Pro Leu Pro His Asn Gly Cys Arg Pro
          115          120          125
Pro Lys Arg Arg Arg Val
          130

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<210> 7098

<211> 452

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (67)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7098

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Asn Ser Asp Ser Met Arg Lys Ala Ile Glu Ser Ser Lys Asn Ile Trp
1           5           10           15
Lys Ile Glu Asp Leu Arg Gln Arg Ile Leu Ile Thr Ile Leu Phe Val
          20           25           30
Ala Ile Tyr Arg Phe Gly Ser Tyr Val Val Phe Pro Gly Ile Asn Pro
          35           40           45
Gly Met Leu Thr Gln Leu His Arg Gln Thr Ser Glu Gly Leu Leu Ala
          50           55           60
Leu Leu Xaa Val Phe Ser Gly Ala Ala Phe Ser Asn Ala Ser Ile Phe
65           70           75           80
Ala Leu Gly Ile Met Pro Tyr Ile Cys Ala Ser Ile Val Ile Gln Leu
          85           90           95
Leu Gly Ile Val Val Pro Tyr Phe Gln Ile Leu Gln Arg Glu Gly Glu
          100          105          110
Ser Gly Arg Arg Lys Met Asn Gln Tyr Thr Arg Tyr Leu Thr Ile Ala
          115          120          125
Ile Leu Leu Val Gln Ala Pro Ser Tyr Leu Leu Asn Leu Lys Met Gln
          130          135          140
Ala Gly Pro Ser Leu Asn Ala Ser Leu Asp Trp Thr Leu Phe Met Val
145          150          155          160
Thr Ser Thr Ile Ile Leu Ala Ala Gly Ser Met Phe Ile Leu Trp Leu
          165          170          175
Gly Glu Arg Ile Thr Asp Lys Gly Ile Gly Asn Gly Ile Ser Phe Ile
          180          185          190
Ile Leu Ile Gly Ile Ile Ala Arg Leu Pro Gln Ser Leu Phe Gln Glu
          195          200          205
Leu Ile Ser Arg Met Thr Asp Lys Thr Gly Gly Leu Ile Met Phe Leu
          210          215          220

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Phe Glu Ile Val Phe Leu Leu Ile Val Ile Ala Gly Ala Ile Leu Leu
 225 230 235 240
 Val Gln Gly Thr Arg Lys Ile Pro Val Gln Tyr Ala Lys Arg Ile Val
 245 250 255
 Gly Asn Lys Gln Tyr Gly Gly Ala Arg Gln Tyr Ile Pro Leu Lys Val
 260 265 270
 Asn Ala Ala Gly Val Met Pro Ile Phe Ala Gln Ala Ile Met Phe
 275 280 285
 Ile Pro Ile Thr Phe Ile Gly Phe Ser Asn Thr Asn Asn Val Ser Gly
 290 295 300
 Phe Val His Ala Phe Thr Asp His Thr Ser Phe Trp Tyr Asn Phe Val
 305 310 315 320
 Phe Ala Val Met Ile Ile Leu Phe Thr Tyr Phe Tyr Thr Ala Ile Thr
 325 330 335
 Ile Asn Pro Thr Gln Met Ala Glu Asp Met Lys Arg Asn Asn Gly Phe
 340 345 350
 Ile Pro Gly Ile Lys Pro Gly Lys Lys Thr Ala Glu Tyr Ile Asp Asp
 355 360 365
 Ile Met Ser Arg Ile Thr Leu Pro Gly Ser Phe Phe Leu Ala Phe Ile
 370 375 380
 Ala Ile Met Pro Ala Phe Ala Gly Ile Phe Gly Val Lys Ala Glu Phe
 385 390 395 400
 Ala Gln Phe Phe Gly Thr Ser Leu Leu Ile Leu Val Gly Val Val
 405 410 415
 Leu Asp Thr Leu Gln Gln Val Glu Ser His Leu Leu Met Arg His Tyr
 420 425 430
 Asp Gly Leu Leu Lys Ser Gly Arg Ile Lys Gly Arg Thr Gly Ser Ser
 435 440 445
 Val Ala Ala Tyr
 450

<210> 7099
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 7099
 Ile Gln Lys Ser His Pro Lys Asp Lys Asn Thr Ile Asn Ser Ala Asp
 1 5 10 15
 Thr Asp Ser Met Pro Arg Leu Pro Ile Tyr Lys Ala Arg Ser Met Val
 20 25 30
 Gly Asn Phe Ile Asp Met Ala Glu Lys Ile Thr Ile Ala Ile Ala Leu
 35 40 45
 Ile Pro Lys Gln Arg Leu Lys Asp Arg Gly Glu Ser Pro
 50 55 60

<210> 7100
 <211> 177
 <212> PRT
 <213> B.fragilis

<400> 7100
 Ala Ser Ile Pro Pro Pro Ile Gly Ala Met Thr Val Ala Ile Pro Phe
 1 5 10 15
 Ile Pro Pro Ile Thr Ala Ser Met Pro Ala Ser Cys Cys Pro Glu Tyr
 20 25 30
 Ser Ser Val Ala Met Glu Arg Glu Ile Thr Thr Pro Pro Ala Pro Ala
 35 40 45
 Met Pro Cys Lys Asn Arg Asp Val Thr Asn Cys Glu Met Val Cys Glu

50		55		60
Lys Met His Pro Thr Val Ala Ser Arg Asn Arg Ile Met Ala Arg Ser				
65		70		75
Asn Gly Gly Arg Arg Pro Tyr Leu Ser Leu Lys Gly Pro Lys Ile Asn				80
		85		90
Cys Pro Ala Ala Lys Pro Ile Met Leu Val Val Ser Pro Asn Cys Thr				95
		100		105
Ile Glu Asp Glu Val Trp Lys Lys Ser Ala Ile Ala Gly Lys Val Gly				110
		115		120
Lys Tyr Met Ser Ile Ile Lys Gly Pro Lys Ala Leu Asn Thr Pro Lys				125
		130		135
Asn Asn Asn Lys Asn Arg Leu Glu Phe Cys Leu Ser Val Ile Ala Ile				140
		145		150
Leu Phe Asp Gln Tyr Gly Cys Lys Ile Thr Pro Ser Val Arg Asn Arg				155
		165		170
Ile				175

<210> 7101

<211> 759

<212> PRT

<213> B.fragilis

<400> 7101

Thr Tyr Ser Thr Met Lys Phe Lys Thr Phe Leu Ala Gly Cys Leu Gly				
1		5		10
Gly Leu Leu Ser Leu Asn Ser Cys Thr Asn Ser Pro Asp Met Thr Asp				15
		20		25
Tyr Val Ala Tyr Val Asn Pro Phe Ile Gly Thr Gly Gly His Gly His				30
		35		40
Thr Phe Pro Gly Ala Ile Val Pro His Gly Met Ile Ser Pro Ser Pro				45
		50		55
Asp Thr Arg Ile Asp Gly Trp Asp Ala Cys Ser Gly Tyr Tyr Tyr Ala				60
		65		70
Asp Phe Thr Ile Asn Gly Phe Ser His Thr His Leu Ser Gly Thr Gly				75
		85		90
Cys Cys Asp Tyr Gly Asp Val Leu Leu Met Pro Thr Val Gly Glu Gln				95
		100		105
Lys Tyr Leu Pro Thr Gly Ser Gln Ser Gln Gln Met Ala Tyr Ala Ser				110
		115		120
Ala Phe Ser His Gln Asn Glu Thr Ala Glu Pro Gly Tyr Tyr Ser Val				125
		130		135
Phe Leu Asp Thr Tyr Gln Val Lys Ala Glu Leu Thr Ala Ser Lys Arg				140
		145		150
Ala Ala Ile His Arg Tyr Thr Phe Pro Glu Ser Lys Glu Ala Gly Phe				155
		165		170
Ile Leu Asp Leu Asp Tyr Ser Leu Gln Arg Gln Thr Asn Lys Glu Met				175
		180		185
Glu Ile Glu Val Ile Ser Pro Thr Glu Ile Cys Gly Arg Lys Lys Thr				190
		195		200
Met Tyr Trp Ala Phe Asp Gln Tyr Ile Asn Phe Tyr Ala Lys Phe Ser				205
		210		215
Lys Pro Phe Thr Tyr Thr Leu Val Thr Asp Ser Met Ala Leu Asp Asp				220
		225		230
Gly Gly Arg Leu Leu Pro Thr Cys Lys Ala Leu Leu His Phe Asp Thr				235
		245		250
Thr Lys Asp Glu Gln Val Phe Val Lys Val Gly Ile Ser Ala Val Asp				255
		260		265
Ile Glu Gly Ala Arg Lys Asn Val Glu Thr Glu Ile Pro Asp Trp Asp				270

275	280	285
Phe Asp Gly Val Arg Lys	Asp Ala Arg Lys Ala	Trp Asn Glu Thr Leu
290	295	300
Ser Lys Ile Asp Ile Thr	Thr Asn Asp Lys Asn	Asp Lys Thr Ile Phe
305	310	315
Tyr Thr Ala Leu Tyr His	Thr Ala Ile Ser Pro	Asn Leu Phe Thr Asp
325	330	335
Val Asp Gly Arg Tyr Leu	Gly Met Asp Leu Gln	Val His Gln Gly Asp
340	345	350
Thr Leu Asn Pro Met Tyr	Thr Ile Phe Ser Leu	Trp Asp Thr Phe Arg
355	360	365
Ala Leu His Pro Leu Met	Thr Ile Ile Asp Pro	Asp Leu Asn Asn Ala
370	375	380
Phe Ile Arg Ser Leu Ile	Lys Lys His Gln Glu	Gly Gly Ile Phe Pro
385	390	395
Met Trp Asp Met Ala Ser	Asn Tyr Thr Gly Thr	Met Ile Gly Tyr His
405	410	415
Ala Val Pro Val Ile Val	Asp Ala Tyr Met Lys	Gly Asp Arg Asn Phe
420	425	430
Asp Ile Gln Glu Ala Tyr	Arg Ala Cys Val Arg	Ala Ala Glu Tyr Asp
435	440	445
Thr Thr Gly Ile Lys Cys	Pro Asp Leu Val Leu	Pro His Leu Met Pro
450	455	460
Lys Ala Lys Tyr Tyr Lys	Asn Ser Ile Gly Tyr	Val Pro Cys Asp Arg
465	470	475
Glu Asn Glu Ser Val Ala	Lys Ala Leu Glu Tyr	Ala Tyr Asp Asp Trp
485	490	495
Cys Ile Ser Val Phe Ala	Asp Ala Leu Asn Asp	Tyr Asp Thr Arg Asp
500	505	510
Lys Tyr Ala Arg Phe Ala	Lys Ala Tyr Glu Phe	Tyr Phe Asp Pro Gly
515	520	525
Thr Arg Phe Met Arg Gly	Leu Asp Ser Lys Gly	Glu Trp Arg Thr Pro
530	535	540
Phe Asn Pro Arg Ser Ser	Thr His Arg Asn Asp	Asp Tyr Cys Glu Gly
545	550	555
Thr Ala Trp Gln Trp Thr	Trp Phe Val Pro His	Asp Ile Glu Gly Leu
565	570	575
Val Lys Leu Met Gly Gly	Glu Asp Ala Phe Ile	Gly Lys Leu Asp Ser
580	585	590
Leu Phe Thr Ala Asp Ser	Ser Leu Glu Gly Glu	Thr Thr Ser Ser Asp
595	600	605
Ile Ser Gly Leu Ile Gly	Gln Tyr Ala His Gly	Asn Glu Pro Ser His
610	615	620
His Val Ile His Met Tyr	Asn Tyr Val Asn Arg	Pro Trp Arg Thr Gln
625	630	635
Glu Leu Val Asp Ser Val	Tyr Arg Ser Gln Tyr	Ala Asp Ala Val Asp
645	650	655
Gly Leu Ser Gly Asn Glu	Asp Cys Gly Gln Met	Ser Ala Trp Tyr Val
660	665	670
Leu Asn Ser Met Gly Phe	Tyr Gln Val Cys Pro	Gly Lys Pro Val Tyr
675	680	685
Ser Ile Gly Arg Thr Ala	Phe Asp Lys Ala Val	Val Asn Leu Pro Asp
690	695	700
Gly Lys Lys Phe Thr Val	Ile Val Lys Asn Asn	Ser Lys Lys Asn Lys
705	710	715
Tyr Ile Lys Ser Met Thr	Leu Asn Gly Lys Pro	Leu Asp Lys Pro Phe
725	730	735
Phe Thr His Asp Asp Ile	Ile Ala Gly Ser Thr	Leu Glu Ile Glu Met
740	745	750

[illegible]

<400> 7102

Glu 1	Gly	Ile	Thr	Glu 5	Thr	Glu	Ser	Ile	Leu 10	Ser	Pro	Pro	Ala	Val 15	Tyr
Asn	Ala	Pro	Ser	Ala 20	Leu	Met	Ile	Thr 25	Ser	Arg	Asn	Thr	Lys 30	Arg	Arg
Ile	Asn	Gln	His	Thr 35	Ser	Ser	Phe	Val 40	Leu	His	Leu	Tyr 45	Ser	Leu	Pro
Leu	His	Thr	Lys	Ser 50	Ile	Asn	Tyr 55	Leu	Lys	Asn	Ser 60	Asn	Pro	Ser	Arg
Met 65	Lys	Val	Leu	Phe 70	His	Ser	Leu	Phe	Ile 75	Leu	Phe	Val	Phe	Thr 80	
Ala	Cys	Thr	Ser	Thr 85	Pro	Lys	Gln	Ala	Thr 90	Ile	Asp	Tyr	Thr	Gln	Tyr
Val	Asn	Pro	Phe	Ile 100	Gly	Thr	Asp	Phe	Thr 105	Gly	Asn	Thr	Tyr	Pro	Gly
Ala	Gln	Val	Pro	Phe 115	Gly	Met	Val	Gln	Leu	Ser	Pro	Asp	Asn	Gly	Leu
Pro	Gly	Trp	Asp	Arg 130	Ile	Ser	Gly	Tyr 135	Phe	Tyr	Pro	Asp	Ser	Thr	Ile
Ala 145	Gly	Phe	Ser	His 150	Thr	His	Leu	Ser	Gly	Thr 155	Gly	Ala	Gly	Asp	Leu
Tyr	Asp	Ile	Ser	Phe 165	Met	Pro	Val	Thr	Leu	Pro	Tyr	Lys	Glu	Ala	Glu
Thr	Pro	Leu	Gly	Ile 180	Tyr	Ser	Lys	Phe	Ser 185	His	Gln	Asp	Glu	Ser	Ala
Thr	Ala	Gly	Tyr	Tyr 195	Gln	Val	Leu	Leu	Lys 200	Asp	Tyr	Gly	Ile	Asn	Val
Glu	Leu	Thr	Ala	Thr 210	Glu	Arg	Cys	Gly	Ile 215	Gln	Arg	Tyr	Thr	Phe	Pro
Glu 225	Ala	Lys	Ala	Ala 230	Ile	Phe	Leu	Asn	Leu	Lys	Lys	Ala	Met	Asn	Trp
Asp	Phe	Thr	Asn	Asp 245	Ser	His	Ile	Glu	Val 250	Ile	Asp	Ser	Val	Thr	Ile
Gln	Gly	Tyr	Arg	Phe 260	Ser	Asp	Gly	Trp	Ala 265	Arg	Asp	Gln	His	Val	Tyr
Phe	Arg	Thr	Arg	Phe 275	Ser	Lys	Pro	Phe	Thr 280	Ala	Val	Gln	Met	Asp	Thr
Thr	Ala	Ile	Leu	Lys 290	Asp	Gly	Lys	Arg	Met 295	Gly	Thr	Ala	Thr	Ile	Ala
Arg 305	Phe	Asp	Phe	Asp 310	Thr	Gln	Lys	Gly	Glu	Gln	Ile	Leu	Val	Asn	Thr
Ala	Leu	Ser	Gly	Val 325	Ser	Met	Glu	Gly	Ala 330	Ala	Gln	Asn	Leu	Ala	Ala
Glu	Val	Pro	Glu	Asp 340	Asn	Phe	Asp	Lys	Tyr 345	Arg	Glu	Ala	Ala	Arg	Asp
Asn	Trp	Asn	Arg	Gln 355	Leu	Ser	Lys	Ile	Ala 360	Val	Lys	Gly	Asp	His	Lys
Asp	Asp	Trp	Val	Asn 370	Phe	Tyr	Thr	Ala	Leu 375	Tyr	His	Thr	Met	Leu	Ala
Pro 385	Thr	Ile	Tyr	Ser 390	Asp	Val	Asp	Gly	Ser 395	Tyr	Tyr	Gly	Pro	Asp	Lys

Lys Ile His His Thr Asp Gly Trp Val Asn Tyr Ser Thr Phe Ser Leu
 405 410 415
 Trp Asp Thr Tyr Arg Ala Ala His Pro Leu Phe Thr Tyr Thr Glu Pro
 420 425 430
 Glu Arg Thr Asn Asp Met Val Gln Ser Phe Leu Ala Phe Tyr Glu Gln
 435 440 445
 Asn Gly Arg Leu Pro Val Trp Asn Phe Tyr Gly Ser Glu Thr Asp Met
 450 455 460
 Met Ile Gly Tyr His Ala Val Pro Val Ile Val Asp Ala Tyr Leu Lys
 465 470 475 480
 Gly Ile Gly Asn Phe Asp Pro Lys Lys Ala Leu Glu Ala Cys Val Ala
 485 490 495
 Thr Ala Asn Leu Asp Asn Tyr Arg Gly Ile Gly Ala Tyr Lys Glu Leu
 500 505 510
 Gly Tyr Val Pro Phe Asn Glu Lys Asp Ser Tyr Asn Ala Glu Asn Trp
 515 520 525
 Ser Leu Ser Lys Thr Leu Glu Tyr Ala Tyr Asp Asp Tyr Cys Ile Ala
 530 535 540
 Arg Met Ala Glu Lys Leu Gly Lys Lys Glu Ile Ala Asp Glu Phe Tyr
 545 550 555 560
 Lys Arg Ser Gln Asn Tyr Arg Asn Val Tyr Asn Pro Ala Thr Ser Phe
 565 570 575
 Met Gln Pro Arg Asp Asp Lys Gly Glu Phe Gln Lys Asp Phe Lys Ala
 580 585 590
 Asp Ala Tyr Thr Pro His Ile Cys Glu Ser Asn Gly Trp Gln Tyr Phe
 595 600 605
 Trp Ser Val Gln His Asp Ile Asp Gly Leu Ile Gly Leu Thr Gly Gly
 610 615 620
 Lys Glu Arg Phe Ala Gln Lys Leu Asp Ser Met Phe Thr Phe His Pro
 625 630 635 640
 Ser Ala Asp Asp Glu Leu Pro Leu Phe Ser Thr Gly Met Ile Gly Gln
 645 650 655
 Tyr Ala His Gly Asn Glu Pro Ser His His Val Ile Tyr Leu Tyr Asn
 660 665 670
 Ala Val Asp Gln Pro Trp Lys Thr Gln Glu Tyr Val Ala Lys Val Met
 675 680 685
 Asn Glu Leu Tyr Leu Asn Ser Pro Ala Gly Leu Cys Gly Asn Glu Asp
 690 695 700
 Cys Gly Gln Met Ser Ala Trp Tyr Val Phe Ser Ala Met Gly Phe Tyr
 705 710 715 720
 Pro Val Asn Pro Ile Ser Gly Gln Tyr Glu Ile Gly Thr Pro Leu Phe
 725 730 735
 Pro Glu Val Gln Leu His Leu Asp Asn Gly Lys Thr Phe Thr Val Lys
 740 745 750
 Ala Pro Thr Val Ser Lys Glu Asn Ile Tyr Ile Arg Ser Thr Lys Leu
 755 760 765
 Asn Gly Lys Pro Tyr Asp Lys Ser Tyr Ile Thr His Glu Gln Ile Met
 770 775 780
 Ser Gly Ala Thr Leu Glu Phe Glu Met Gly Lys Glu Lys Val Thr Ser
 785 790 795 800
 Asp Gln

<210> 7103

<211> 1220

<212> PRT

<213> B.fragilis

<400> 7103

Val Val Gly Leu Asn Ile Gly Leu Gly Cys Ile Thr Gln Ala Asp Ile
 1 5 10 15
 Arg Phe Val Gly Gly Tyr Ser Pro Trp Phe Ser Ser Leu Pro Phe Leu
 20 25 30
 Asn Ile Asn Ser Met Leu Asn Phe Lys His Leu Phe Leu Val Ser Val
 35 40 45
 Ala Leu Trp Ser Ala Val Gly Met Val Arg Ala Gln Glu Phe Asp Pro
 50 55 60
 Lys Gln Ser Tyr Glu Ile His Thr Gln Asn Gly Leu Val Leu Asp Asn
 65 70 75 80
 Gln Glu Ser Leu Asp Leu Gly Ser Lys Ile Phe Ile Ser Lys Lys Glu
 85 90 95
 Pro His Lys Glu Ser Gln Val Trp Asn Leu Ile Pro Cys Gly Asp Gly
 100 105 110
 Cys Tyr Ser Ile Val Ser Pro Leu Thr Glu Leu Gly Ile Asp Asn Ser
 115 120 125
 Gly Asn Gly Ser Lys Glu Cys Pro Val Ile Gln Trp Asp Pro Asn Lys
 130 135 140
 Glu Asn Pro Asn Gln Gln Trp Arg Ile Thr Ala Leu Pro Asn Gly Asn
 145 150 155 160
 Tyr Leu Phe Thr Ser Val Ala Ser Gly Tyr Asn Leu Gly Phe Pro Asp
 165 170 175
 Ala Gly Leu Val Ala Glu Pro Val Tyr Gln Leu Lys Pro Asp Ala Gln
 180 185 190
 Lys Ile Ser Gln Gln Trp Lys Ile Val Lys Ser Asn Leu Lys Val Val
 195 200 205
 Ala Glu Ala Phe Lys Thr Arg Ser Asp Asn Asp Trp Glu Asn Glu Arg
 210 215 220
 Ile Phe Ala Val Asn Lys Glu Glu Gly Arg Ser Thr Phe Val Pro Phe
 225 230 235 240
 Ala Asp Thr Glu Glu Met Lys Gly Asp Pro Ser Tyr Thr Arg Pro Trp
 245 250 255
 Ile Arg Asn Gln Ser Ser Arg Tyr Leu Leu Leu Asn Gly Asp Trp Lys
 260 265 270
 Phe His Trp Val Lys Gln Pro Ser Glu Arg Pro Val Asp Phe Tyr Lys
 275 280 285
 Pro Gly Tyr Asp Val Ser Ala Trp Lys Glu Ile Pro Val Pro Ser Asn
 290 295 300
 Trp Glu Met Leu Gly Tyr Gly Thr Pro Ile Tyr Thr Asn Ile Thr Tyr
 305 310 315 320
 Pro Ile Arg Asn Asn Pro Pro Phe Ile Gln Gly Gln Arg Gly Tyr Thr
 325 330 335
 Val Glu Lys Glu Pro Asn Ala Val Gly Ser Tyr Arg Arg Glu Phe Ser
 340 345 350
 Leu Pro Ala Asp Trp Lys Asn Lys Glu Val Phe Ile His Phe Asp Gly
 355 360 365
 Val Tyr Ser Ala Met Tyr Leu Trp Ile Asn Gly Lys Lys Val Gly Tyr
 370 375 380
 Ser Gln Gly Ala Asn Asn Asp Ala Glu Phe Asn Ile Thr Gln Tyr Val
 385 390 395 400
 Lys Pro Gly Lys Asn Ile Leu Ala Val Glu Val Tyr Arg Trp Ser Asp
 405 410 415
 Gly Ser Tyr Leu Glu Asp Gln Asp Met Phe Arg Leu Ser Gly Ile His
 420 425 430
 Arg Asp Val Tyr Leu Val Ala Thr Pro Lys Leu Arg Leu Arg Asp Val
 435 440 445
 His Leu Thr Ser Val Ile Ser Asp Arg Phe Asp Lys Ala Asp Leu Cys
 450 455 460
 Val Lys Ala Asp Val Lys Asn Tyr Gly Lys Ser Ala Val Asn Ala Ser

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465		470		475		480
Val Arg Ile Ala	Leu Leu Asp Ala Gly Gly Arg Thr Leu Arg Thr Phe					
	485		490		495	
Thr Thr Ala Ala	Gly Asn Leu Ala Ala Gly Lys Glu Ile Cys Leu Pro					
	500		505		510	
Ala Lys Ala Ser	Ile Arg Asp Pro Gln Leu Trp Ser Ala Glu Thr Pro					
	515		520		525	
Tyr Leu Tyr Thr	Val Asn Leu Glu Leu Leu Asp Ala Ser Gly Lys Val					
	530		535		540	
Leu Glu Ala Thr	Thr Gln Gln Tyr Gly Phe Arg Lys Ile Glu Ile Arg					
545		550		555		560
Asp Asn Lys Val	Tyr Ile Asn Asp Ala Leu Val Leu Phe Lys Gly Ala					
	565		570		575	
Asn Arg His Asp	Ile His Pro Arg Phe Gly Lys Ala Val Pro Val Glu					
	580		585		590	
Ser Met Ile Glu	Asp Ile Leu Leu Phe Lys Arg Phe Asn Leu Asn Thr					
	595		600		605	
Ile Arg Thr Ser	His Tyr Pro Asn Asp Pro Lys Met Tyr Ala Leu Phe					
610		615		620		
Asp Tyr Tyr Gly	Leu Tyr Val Met Asp Glu Ala Asp Leu Glu Cys His					
625		630		635		640
Gly Asn Met Met	Leu Thr Lys Arg Glu Ser Trp Lys Glu Ala Phe Val					
	645		650		655	
Asp Arg Val Val	Arg Met Val Lys Arg Asp Lys Asn His Pro Ser Val					
	660		665		670	
Ile Phe Trp Ser	Met Gly Asn Glu Ser Gly Gly Gly Pro Asn Phe Glu					
	675		680		685	
Ala Ala Tyr Gln	Ala Ala Arg Glu Ile Asp Ala Arg Phe Ile His Tyr					
690		695		700		
Glu Gly Met Asn	Asp Val Ala Asp Met Asp Ser Arg Met Tyr Pro Ser					
705		710		715		720
Ile Glu Ser Met	Ile Ala Gln Asp Asn Glu Pro Arg Asn Lys Pro Phe					
	725		730		735	
Phe Leu Cys Glu	Tyr Ala His Ala Met Gly Asn Ala Val Gly Asn Leu					
	740		745		750	
Glu Glu Tyr Trp	Asp Tyr Ile Ala Asn Gln Ser Lys Arg Met Ile Gly					
	755		760		765	
Gly Cys Ile Trp	Asp Trp Val Asp Gln Gly Ile Asn Lys Pro Gly Glu					
	770		775		780	
Ala Pro Asp Arg	Tyr Tyr Phe Gly Gly Ser Phe Gly Asp Arg Pro Asn					
785		790		795		800
Asp Asn Asp Phe	Cys Cys Asn Gly Leu Val Thr Pro Asp Arg Arg Val					
	805		810		815	
Thr Pro Lys Leu	Trp Glu Val Lys Lys Val Tyr Gln Tyr Met Thr Phe					
	820		825		830	
Glu Glu Val Gly	Glu Asn Asn Val Gly Leu Arg Asn His Tyr Ser Phe					
	835		840		845	
Leu Asn Met Arg	His Phe Asn Leu Arg Tyr Val Ile Leu Lys Asp Gly					
	850		855		860	
Val Pro Val Ala	Glu Glu Phe Gly Leu Pro Asp Gly Lys Pro Gly					
865		870		875		880
Glu His Arg Thr	Ile His Ile Pro Tyr Leu Arg His Leu Thr Glu Asp					
	885		890		895	
Ala Asp Tyr His	Ile Asn Leu Glu Val Lys Leu Lys His Asp Cys Val					
	900		905		910	
Trp Ala Lys Ala	Gly His Val Val Ala Thr Glu Gln Phe Leu Leu Arg					
	915		920		925	
Glu Arg Lys Gln	Lys Thr Glu Val Pro Glu Leu Ser Ala Ser Leu Gln					
930		935		940		

Val Val Glu Glu Arg Gln Tyr Ile Arg Phe Arg Ala Pro Gly Thr Glu
 945 950 955 960
 Ile Ser Phe Asp Ser Lys Thr Gly Met Met Ile Gly Leu Arg Tyr Asp
 965 970 975
 Gly Gln Asn Met Ile His Gly Gln Gln Gly Pro Ala Leu Asn Trp Tyr
 980 985 990
 Arg Ser Ile Ser Asn Asp Pro Arg Glu Trp Ile Gln Pro Val Val Val
 995 1000 1005
 Leu Arg Gly Phe Asp Trp Lys Leu Ala Glu Asp Gly Lys Ser Ala Ser
 1010 1015 1020
 Val Gln Ser Gln Ile Glu Val Lys Val Gly Gln Val Asn Ile Pro Tyr
 1025 1030 1035 1040
 Thr Val Arg Tyr Arg Val Tyr Ser Asn Gly Arg Val Asp Val Ala Ala
 1045 1050 1055
 Asp Phe Thr Thr Glu Ser Asn Phe Asp Leu Pro Arg Leu Gly Leu Gln
 1060 1065 1070
 Met Phe Leu Asn Pro Ser Leu Glu Gln Val Glu Trp Tyr Gly Arg Gly
 1075 1080 1085
 Pro Met Glu Asn Tyr Arg Asp Arg Lys Asn Ala Ala Tyr Met Gly Arg
 1090 1095 1100
 Tyr Lys Thr Thr Val Thr Asp Met Ala Glu His Tyr Ala Arg Ala Gln
 1105 1110 1115 1120
 Thr Met Gly Glu Arg Thr Asp Thr His Trp Leu Ala Leu Thr Asp Gly
 1125 1130 1135
 Gln Gly Lys Gly Leu Arg Ile Thr Ala Thr Asp Thr Leu Asp Phe Ser
 1140 1145 1150
 Ala Gln His Tyr Thr Asp Lys Asp Leu Trp Gln Val Lys Tyr Gly His
 1155 1160 1165
 Asp Leu Ser Asp Ile Arg Arg Ala Glu Val Val Leu Asn Leu Asp Cys
 1170 1175 1180
 Ile Gln Arg Gly Leu Gly Asn Ala Ser Cys Gly Pro Gly Pro Arg Pro
 1185 1190 1195 1200
 His Tyr Glu Ile Arg Lys Asp Thr Val Tyr Ser Tyr Ser Phe Arg Met
 1205 1210 1215
 Glu Pro Leu Arg
 1220

<210> 7104

<211> 378

<212> PRT

<213> B.fragilis

<400> 7104

Lys Arg Gln His Lys Glu His Leu Ile Asn Lys Lys Leu Lys Gln Lys
 1 5 10 15
 Met Lys Arg Ile Val Phe Leu Asp Tyr Val Arg Val Phe Ala Cys Phe
 20 25 30
 Leu Val Met Ile Val His Ser Ser Glu Asn Phe Tyr Gly Ala Ala Gly
 35 40 45
 Ser Thr Asp Met Ala Gly Pro Gln Ser Tyr Leu Ala Ser Glu Ala Asp
 50 55 60
 Arg Leu Trp Val Ala Val Tyr Asp Gly Phe Ser Arg Met Ala Val Pro
 65 70 75 80
 Leu Phe Met Ile Val Ser Ala Phe Leu Leu Ala Pro Met Lys Glu Glu
 85 90 95
 Gln Thr Thr Trp Gln Phe Tyr Arg Gln Arg Phe Leu Arg Ile Ile Pro
 100 105 110
 Pro Phe Phe Ile Phe Met Ile Leu Tyr Ser Thr Leu Pro Met Leu Trp
 115 120 125

Gly Gln Ile Asn Gly Glu Thr Ser Leu Thr Asp Leu Ser Arg Ile Phe
 130 135 140
 Leu Asn Phe Pro Thr Leu Ala Gly His Leu Trp Phe Met Tyr Pro Leu
 145 150 155 160
 Ile Ser Leu Tyr Leu Phe Ile Pro Ile Ile Ser Pro Trp Leu Arg Lys
 165 170 175
 Ala Ser Ala Lys Glu Glu Arg Phe Phe Ile Gly Leu Phe Leu Leu Ser
 180 185 190
 Thr Cys Ile Pro Tyr Leu Asn Arg Trp Cys Gly Glu Val Trp Gly Gln
 195 200 205
 Cys Phe Trp Asn Glu Tyr His Met Leu Trp Tyr Phe Ser Gly Tyr Leu
 210 215 220
 Gly Tyr Leu Val Leu Ala His Tyr Ile His Thr His Leu Thr Trp Ser
 225 230 235 240
 Arg Ser Lys Arg Phe Ile Ile Gly Thr Ile Leu Met Val Ile Gly Ala
 245 250 255
 Val Leu Thr Ile Tyr Ser Phe Tyr Ser Gln Ala Ile Pro Gly Glu Thr
 260 265 270
 Leu Ser Thr Pro Val Ile Glu Ile Gly Trp Ala Phe Cys Thr Ile Asn
 275 280 285
 Cys Val Leu Leu Thr Ala Gly Thr Phe Leu Met Phe Thr Cys Ile Asn
 290 295 300
 Ser Ser Lys Ala Pro Arg Ile Ile Thr Glu Met Ser Lys Leu Ser Tyr
 305 310 315 320
 Gly Met Tyr Leu Met His Ile Phe Trp Leu Gly Leu Trp Ala Thr Val
 325 330 335
 Phe Lys Tyr Thr Leu Ala Leu Pro Thr Val Ala Ala Ile Pro Cys Ile
 340 345 350
 Ala Val Ser Thr Phe Ile Cys Cys Phe Ile Thr Ser Lys Leu Ile Ser
 355 360 365
 Phe Ile Pro Gly Ser Lys Trp Ile Ile Gly
 370 375

<210> 7105
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 7105
 Pro Tyr Ser Asn Val His Pro Met Ile His Leu Leu Pro Gly Met Asn
 1 5 10 15
 Glu Met Ser Phe Glu Val Met Lys Gln Gln Ile Asn Val Leu Thr Ala
 20 25 30
 Met His Gly Ile Ala Ala Thr Val Gly Ser Ala Arg Val Tyr Leu Asn
 35 40 45
 Thr Val Ala His Asn Pro Asn Gln Lys Ile Cys Ile Arg Tyr Ile Pro
 50 55 60

<210> 7106
 <211> 234
 <212> PRT
 <213> B.fragilis

<400> 7106
 Thr Lys Lys Asn Ile Phe Ile Met Lys Thr Val Phe Asn Ile Val Leu
 1 5 10 15
 Gly Val Cys Ala Ile Ala Leu Val Tyr Ile Cys Tyr Ala Ser Ile Met
 20 25 30
 Gly Pro Ile Asn Phe Glu Lys Ala Lys Lys His Arg Asp Lys Ala Val

35	40	45
Val Ala Arg Leu Ile Asp	Ile Arg Lys Ala Gln	Ala Glu Tyr Arg Asn
50	55	60
Ile Tyr Lys Gln Tyr Thr	Ala Ser Phe Asp Thr	Leu Ile Asp Phe Val
65	70	75
Lys Thr Gln Lys Ile Pro	Phe Val Ser Lys Glu	Gly Val Leu Ser Asp
85	90	95
Lys Gln Leu Glu Asp Gly	Met Thr Glu Lys Lys	Ala Met Ala Leu Ile
100	105	110
Asn Lys Ala Lys Lys Thr	Asn Asn Trp Lys Glu	Val Glu Ala Ala Gly
115	120	125
Leu Met Gly Phe Lys Arg	Asp Thr Ile Trp Val	Ala Val Thr Asp Thr
130	135	140
Ile Tyr Asp Lys Ser Phe	Asn Ala Asp Ser Leu	Arg Tyr Val Pro Phe
145	150	155
Gly Asn Gly Ala Gln Phe	Glu Met Tyr Thr Lys	Asn Asp Thr Thr Lys
165	170	175
Ser Gly Ala Pro Ile Phe	Leu Phe Gln Ala Asn	Thr Pro Tyr Asp Val
180	185	190
Tyr Leu Asn Gly Leu Asp	Lys Gln Glu Ile Ala	Asn Leu Lys Asp Leu
195	200	205
Gln Val Lys Leu Gly Lys	Tyr Ala Gly Leu Met	Val Gly Ser Ile Asp
210	215	220
Thr Pro Asn Asn Gly Ala	Gly Asn Trp Glu	
225	230	

<210> 7107

<211> 736

<212> PRT

<213> B.fragilis

<400> 7107

Ser Met Lys Asn Lys Ile Leu Phe Gln Arg Pro Arg Leu Leu Lys Ala	
1	5 10 15
Ser Leu Val Leu Leu Leu Ala Ala Ala Pro Ile Gln Trp Ser Phe Ala	
20	25 30
Gln Phe Thr Phe Ser Thr Ser Arg Thr Thr Leu Gly Gln Val Ile Lys	
35	40 45
Thr Val Gln Ser Gln Ser Lys Tyr Gln Phe Phe Tyr Asp Asp Gln Ser	
50	55 60
Ser Asn Met Pro Ile Glu Asn Leu Asn Val Lys Asn Val Ser Leu Glu	
65	70 75 80
Gln Leu Leu Asn Thr Ala Leu Lys Gly Lys Asn Leu Thr Tyr Lys Ile	
85	90 95
Glu Asp Asn Ile Val Tyr Leu Ser Gln Ala Ser Lys Gln Gln Asp Pro	
100	105 110
Val Gln Ala Ser Ala Lys Arg Gln Ile Ser Gly Thr Val Val Asp Ala	
115	120 125
Asn Gly Glu Ala Leu Ile Gly Val Asn Val Ser Val Lys Gly Thr Ser	
130	135 140
Thr Gly Ala Ile Thr Asp Leu Glu Gly Lys Tyr Thr Leu Thr Val Asn	
145	150 155 160
Asp Pro Lys Ala Glu Ile Val Phe Ser Tyr Ile Gly Tyr Lys Gln Gln	
165	170 175
Val Leu Pro Ala Lys Glu Ser Ile Leu Asn Val Thr Met Ser Glu Asp	
180	185 190
Thr Gln Met Ile Ser Glu Val Val Val Thr Ala Leu Gly Ile Lys Arg	
195	200 205
Glu Lys Lys Met Leu Gly Tyr Ala Val Gln Glu Ile Lys Gly Asp Gln	

210	215	220
Leu Asn Gln Thr Gly Asp	Pro Ser Val Thr Ser	Ala Leu Gln Gly Lys
225	230	235
Val Ala Gly Leu Gln Met Asn Thr Ala Gly Thr Gly Leu Gly Gly Ser		240
	245	250
Thr Lys Ile Thr Ile Arg Gly Asn Ser Ser Leu Ala Asp Asn Asn Gln		255
	260	265
Pro Leu Trp Ile Val Asp Gly Val Pro Phe Ser Asp Asn Asn Asn Ser		270
	275	280
Asp Ala Thr Tyr Tyr Gly Gly Val Asp Arg Gly Gly Ser Ser Val Asp		285
	290	295
Ile Asn Pro Glu Asp Ile Glu Ser Ile Ser Val Leu Lys Gly Pro Asn		300
305	310	315
Ala Ala Ala Leu Tyr Gly Ser Arg Ala Gly Asn Gly Val Ile Leu Val		320
	325	330
Thr Thr Lys Lys Gly Ser Lys Lys Asp Gly Phe Gly Val Arg Tyr Ser		335
	340	345
Gly Asn Phe Thr Trp Ser Gln Val Ala Glu Thr Leu Glu Met Gln Asp		350
	355	360
Arg Tyr Gly Gln Gly His Ile Val Thr Gln Asp Glu Asn Lys Asn Pro		365
	370	375
Leu Ser Gln Tyr Tyr Ala Lys Tyr Asp Pro Thr Asp Ser Ser Ser Trp		380
385	390	395
Gly Pro Val Leu Asp Gly Ser Met Gln Lys Ala Trp Asn Gly Asp Thr		400
	405	410
Tyr Ala Phe Ser Lys Tyr Gly Asn Lys Leu Lys Asp Tyr Phe Asp Thr		415
	420	425
Gly Phe Ala Gln Asn His Asn Val Ser Val Ser Asn Val Thr Asp Lys		430
	435	440
Ser His Phe Arg Ala Ser Phe Gly Ser Ser Asn Asn Lys Gly Val Phe		445
	450	455
Pro Asn Glu Lys Leu Asn Arg Ile Asn Leu Asp Leu Asn Ala Gly Met		460
465	470	475
Glu Met Asn Lys Tyr Leu Ser Met Asp Gly Lys Ile Ser Leu Ser Arg		480
	485	490
Thr Lys Ala Glu Asp Arg Pro Tyr Phe Gly Thr Tyr Gly Ala Ile Ala		495
	500	505
Gln Leu Met Gly Ile Pro Asn Asn Ile Arg Leu Asp Asp Leu Lys Gln		510
	515	520
Tyr Ser Thr Asp Gly Asn Ala His Val Asn Trp Thr Gly Pro Thr Ala		525
	530	535
Gly Ile Arg Asn Pro Tyr Tyr Val Leu Asn Gln Arg His Asn Ser Asp		540
545	550	555
Glu Arg Trp Arg Ala Phe Gly Tyr Tyr Gly Met Lys Ile Asn Phe Thr		560
	565	570
Asp Trp Leu His Leu Ser Ala Lys Tyr Ala Phe Asp Tyr Tyr Arg Thr		575
	580	585
Arg Ile Glu Glu Thr Asn Ala Gly Asp Gly Ile Asn Gly Glu Ser Ser		590
	595	600
Ile Lys Asp Ile Thr Asp Asp Glu Met Asn Arg Glu Glu Gln Asn Phe		605
	610	615
Phe Glu Ser Asn Ala Glu Ile Val Leu Met Gly Asp Lys Gln Leu Thr		620
625	630	635
Asp Asn Phe Arg Leu Gly Phe Thr Val Gly Gly Asn Phe Met Tyr Gln		640
	645	650
Asn Tyr Glu Ser Leu Asn Ala Gly Val Arg Asn Met Leu Asp Lys Gly		655
	660	665
Gln Trp Ile Phe Asn Ala Ala Asn Met Leu Asn Ala Ala Gly Glu Thr		670
	675	680
		685

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Gly His Glu Arg Ala Thr Asn Ser Val Phe Gly Ser Leu Gln Leu Ser
 690 695 700
 Cys Lys Gln Tyr Leu Ser Leu Asp Leu Thr Ala Arg Asn Asp Trp Ser
 705 710 715 720
 Ser Thr Leu Pro Lys Lys Asn Thr Leu Ser Ser Thr Cys Leu Pro Thr
 725 730 735

<210> 7108
 <211> 347
 <212> PRT
 <213> B.fragilis

<400> 7108

Tyr Ser Glu Lys Ser Ser Ala Lys Ile Ala Cys Phe Tyr Tyr Phe Cys
 1 5 10 15
 Arg Ile Asn Lys Arg Asn Ile Tyr Lys Met Arg Lys Val Tyr Tyr Ile
 20 25 30
 Tyr Asn Pro Gln Thr Gln Thr Tyr Asp Arg Ile Tyr Pro Thr Val Arg
 35 40 45
 Gln Arg Ala Leu Ser Ile Leu Arg Arg Leu Phe Ile Gly Met Gly Leu
 50 55 60
 Gly Ala Gly Ser Phe Ile Ile Leu Leu Leu Ile Phe Gly Ser Pro Ser
 65 70 75 80
 Glu Lys Glu Leu Arg Lys Glu Asn Ser Gln Leu Leu Ala Gln Tyr Asn
 85 90 95
 Val Leu Ser Arg Arg Leu Asp Glu Ala Met Gly Val Leu Gln Asp Ile
 100 105 110
 Gln Gln Arg Asp Asp Asn Leu Tyr Arg Val Ile Phe Met Ala Asp Pro
 115 120 125
 Val Ser Pro Ala Ile Arg Gln Ala Gly Tyr Gly Gly Thr Asn Arg Tyr
 130 135 140
 Glu Gln Leu Met Asp Met Ala Asn Ser Lys Leu Val Ile Asn Thr Thr
 145 150 155 160
 Gln Lys Met Asp Val Leu Ser Lys Gln Leu Tyr Ile Gln Ser Lys Ser
 165 170 175
 Phe Asp Asp Val Val Ala Met Cys Lys Asn His Asp Gln Met Leu Lys
 180 185 190
 Cys Ile Pro Ala Ile Gln Pro Ile Ser Asn Lys Asp Leu Arg Lys Thr
 195 200 205
 Ala Ser Gly Tyr Gly Thr Arg Val Asp Pro Ile Tyr Gly Thr Thr Lys
 210 215 220
 Phe His Ala Gly Met Asp Phe Ser Ala His Pro Gly Thr Asp Val Tyr
 225 230 235 240
 Ala Thr Gly Asp Gly Thr Val Val Lys Met Gly Trp Glu Thr Gly Tyr
 245 250 255
 Gly Asn Thr Val Glu Ile Asp His Gly Phe Gly Tyr Arg Thr Arg Tyr
 260 265 270
 Ala His Leu Gln Glu Phe Arg Thr Lys Leu Gly Lys Lys Val Val Arg
 275 280 285
 Gly Glu Val Ile Ala Gly Val Gly Ser Thr Gly Lys Ser Thr Gly Pro
 290 295 300
 His Leu His Tyr Glu Val His Val Lys Gly Gln Val Val Asn Pro Val
 305 310 315 320
 Asn Tyr Tyr Phe Met Asp Leu Ser Ala Glu Asp Tyr Glu Arg Met Ile
 325 330 335
 Gln Ile Ala Ala Asn His Gly Lys Val Phe Asp
 340 345

<210> 7109

<211> 135
 <212> PRT
 <213> B.fragilis

<400> 7109

Lys	Ile	Arg	Lys	Met	Lys	Gln	Arg	Val	Thr	Ser	Asn	His	Ile	Glu	Arg
1			5						10					15	
Leu	Gln	Pro	Asn	Glu	Ile	Phe	Val	Phe	Gly	Ser	Asn	Leu	Ser	Gly	His
		20					25					30			
His	Gly	Gly	Gly	Ala	Ala	Leu	Leu	Ala	Met	Asn	Lys	Trp	Gly	Ala	Ile
	35					40					45				
Trp	Gly	Gln	Gly	Val	Gly	Leu	Gln	Gly	Gln	Thr	Tyr	Gly	Ile	Pro	Thr
	50				55					60					
Met	Gln	Gly	Gly	Val	Glu	Thr	Ile	Arg	Pro	Tyr	Val	Asp	Glu	Phe	Ile
65				70				75					80		
Gln	Phe	Ala	Asn	Lys	His	Pro	Glu	Met	Thr	Phe	Leu	Val	Thr	Glu	Ile
			85			90							95		
Gly	Cys	Gly	Ile	Ala	Gly	Phe	Thr	Pro	Gln	Glu	Ile	Ala	Pro	Leu	Phe
		100				105						110			
Ala	Lys	Ala	Thr	Thr	Thr	Glu	Asn	Ile	His	Leu	Pro	Gln	Arg	Phe	Trp
	115					120						125			
Asp	Leu	Leu	Glu	Arg	Ile	Pro									
	130				135										

<210> 7110
 <211> 126
 <212> PRT
 <213> B.fragilis

<400> 7110

Leu	Lys	Glu	Lys	Lys	Ile	Met	Gln	Asn	Thr	Glu	Arg	Asp	Leu	Lys	Leu
1			5						10					15	
Tyr	Tyr	Ser	Ile	Ser	Glu	Val	Ala	Gln	Met	Phe	Asp	Val	Asn	Glu	Ser
		20					25					30			
Leu	Leu	Arg	Phe	Trp	Glu	Lys	Glu	Phe	Pro	Gln	Ile	Ser	Pro	Lys	Lys
	35				40						45				
Gly	Ser	Arg	Gly	Val	Arg	Gln	Tyr	Arg	Lys	Glu	Asp	Val	Glu	Thr	Ile
	50				55				60						
Arg	Leu	Ile	Tyr	His	Leu	Val	Lys	Glu	Arg	Gly	Met	Thr	Leu	Pro	Gly
65			70					75					80		
Ala	Arg	Gln	Lys	Leu	Lys	Asp	Asn	Arg	Glu	Ala	Thr	Ile	Arg	Asn	Phe
			85			90							95		
Glu	Ile	Ile	Asp	Arg	Leu	Lys	Gln	Ile	Arg	Gln	Glu	Leu	Ile	Gly	Met
		100				105						110			
Arg	Asp	Ala	Leu	Asp	Gly	Phe	Ser	Thr	Lys	Thr	Gly	Gly	Ala		
	115					120						125			

<210> 7111
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 7111

Lys	Glu	Glu	Asn	Arg	Cys	Phe	Lys	Ser	Gln	Arg	Ile	Val	Gly	Phe	Lys
1			5						10					15	
Gly	Arg	Ile	Leu	Trp	Phe	Ser	Ile	Asn	Ile	Leu	Asn	Leu	Lys	Tyr	Leu
		20					25					30			
Phe	Val	Ser	Glu	Ser	Trp	Leu	Met	Val	Cys	Phe	Asp	Phe	Ile	Phe	Ser
	35					40						45			

Arg Leu His Trp Ile Leu Asn Leu Leu Leu Ala Phe Cys Gln Glu Arg
 50 55 60
 Thr Pro
 65

<210> 7112
 <211> 183
 <212> PRT
 <213> B.fragilis

<400> 7112

His Ala Ser Leu Ile Asn Met Arg Val Ile Ser Gly Ile Tyr Lys Arg
 1 5 10 15
 Arg Arg Phe Asp Val Pro Arg Thr Phe Lys Ala Arg Pro Thr Thr Asp
 20 25 30
 Phe Ala Lys Glu Asn Leu Phe Asn Val Leu Ser Asn Tyr Met Asn Phe
 35 40 45
 Glu Glu Gly Ile Val Ala Leu Asp Leu Phe Ala Gly Thr Gly Ser Ile
 50 55 60
 Ser Ile Glu Leu Val Ser Arg Gly Cys Asp Arg Val Ile Ser Val Glu
 65 70 75 80
 Lys Glu Gly Ala His His Ala Phe Ile Ser Lys Ile Met Lys Glu Val
 85 90 95
 Gln Thr Asp Lys Cys Leu Pro Ile Arg Gly Asp Val Phe Lys Phe Ile
 100 105 110
 Asn Gly Ser His Glu Arg Phe Asp Phe Ile Phe Ala Asp Pro Pro Tyr
 115 120 125
 Glu Leu Lys Glu Leu Glu Thr Ile Pro Asp Leu Ile Phe Lys Asn Asn
 130 135 140
 Leu Leu Lys Glu Asp Gly Leu Phe Val Leu Glu His Gly Lys Lys Asn
 145 150 155 160
 Asn Phe Glu Asp His Pro His Phe Ile Glu Arg Arg Val Tyr Gly Ser
 165 170 175
 Val Asn Phe Ser Phe Phe Arg
 180

<210> 7113
 <211> 389
 <212> PRT
 <213> B.fragilis

<400> 7113

Met Lys Gln Glu Lys Gln Thr Glu Leu Leu Arg Thr Gln Gln Met Leu
 1 5 10 15
 Asn Glu Val Asn Arg Lys Leu Leu Met Thr Leu Gly Val Ala Glu Val
 20 25 30
 Phe Pro Trp Lys Trp Glu Leu Ala Glu His Met Val Trp Phe Asp Ala
 35 40 45
 Arg Pro Ser Asp Asp Pro Ala Gly Trp Glu Ile Phe His Asn Asp Ser
 50 55 60
 Phe Pro Val Ser Ile Ala Arg Val Tyr Gln Gly Ile Tyr Lys Glu Asp
 65 70 75 80
 Arg Leu Arg Val Ile Glu Ala Cys Arg Gly Ile Leu Lys Gly Lys Met
 85 90 95
 Lys Lys Val Val Val Glu Leu Arg Phe Trp Ala Lys Lys Arg Glu Gly
 100 105 110
 Phe Val Leu Glu Trp Leu Glu Met His Ala Ile Pro Gly Lys Val Asp
 115 120 125
 Glu Asn Gly Arg Leu Leu Thr Val Glu Gly Ser Leu Met Ser Ile Thr

130 135 140
 Arg Arg Lys Val Met Glu Glu Glu Leu Thr Ala Ala Lys Glu Lys Ala
 145 150 155 160
 Glu Glu Ala Asn Arg Leu Lys Ser Ala Leu Ile Ala Asn Met Asn His
 165 170 175
 Glu Ile Arg Thr Pro Leu Asn Ala Ile Val Gly Phe Ala Ser Leu Leu
 180 185 190
 Ser Ile Ile Asp Asp Glu Lys Glu Gln Gln Glu Tyr Ile Gly Leu Ile
 195 200 205
 Gln Ser Asn Thr Glu His Leu Leu Arg Leu Met Asn Asp Val Ile Asp
 210 215 220
 Leu Ser Asn Ile Glu Ser Gly Val Met Asp Ile Val Gly Ser Asp Val
 225 230 235 240
 Val Leu Asp Ser Leu Met Lys Glu Met Glu Leu Thr Tyr Val Pro Lys
 245 250 255
 Ala Glu Thr Asn Asn Leu Val Leu Ala Trp Asp Arg Glu Gln Ser Asn
 260 265 270
 Ala His Ile Tyr Thr Asp Arg Asp Arg Leu Ile Gln Ile Leu Glu His
 275 280 285
 Leu Leu Asp Asn Ala Ile Lys Phe Thr Thr Lys Gly Thr Val Arg Trp
 290 295 300
 Gly Tyr Gln Glu Lys Glu Asn Gly Gln Ile Arg Phe Tyr Val Thr Asp
 305 310 315 320
 Thr Gly Cys Gly Ile Pro Asn Asp Lys Lys Glu Val Ile Phe Glu Arg
 325 330 335
 Phe Val Lys Leu Asp Ser Phe Thr Gln Gly Leu Gly Leu Gly Leu Ser
 340 345 350
 Leu Cys Lys Ile Ile Ile Glu Arg Met His Gly Thr Ile Gly Val Glu
 355 360 365
 Ser Glu Val Gly Glu Gly Ser Thr Phe Trp Phe Thr Ile Pro Asn Leu
 370 375 380
 Ser Asp Asn His Ile
 385

<210> 7114

<211> 375

<212> PRT

<213> B.fragilis

<400> 7114

Val Leu Ser Phe Thr Ile Tyr Leu Arg Thr Pro Ile Phe Ala Val His
 1 5 10 15
 Lys Lys His Arg Thr Ile Met Ser Lys Gln Glu Val Ile Leu Cys Glu
 20 25 30
 Asp Leu Glu Ser Ser Leu Lys Arg Ala Ile Asp Asn Cys Pro His Asp
 35 40 45
 Arg Leu Phe Ile Leu Thr Asp Asp His Thr His Arg Leu Cys Leu Ser
 50 55 60
 Gln Leu Ala Gly Leu Ser Ile Leu Lys Asp Ala Val Glu Ile Thr Ile
 65 70 75 80
 Gly Ala Glu Asp Val His Lys Thr Leu Glu Thr Leu Ala Ser Val Trp
 85 90 95
 Gln Val Leu Ser Glu Lys Gly Ala Thr Arg His Ser Leu Leu Ile Asn
 100 105 110
 Leu Gly Gly Gly Met Val Thr Asp Leu Gly Gly Phe Ala Ala Thr
 115 120 125
 Phe Lys Arg Gly Ile Ala Tyr Ile Asn Ile Pro Thr Thr Leu Leu Ala
 130 135 140
 Met Val Asp Ala Ser Val Gly Gly Lys Thr Gly Ile Asn Phe Asn Gly

145 150 155 160
 Leu Lys Asn Glu Ile Gly Ala Phe Ala Pro Ala Ala Ser Val Leu Ile
 165 170 175
 Glu Thr Glu Phe Leu Arg Thr Leu Asp Ala His Asn Phe Phe Ser Gly
 180 185 190
 Tyr Ala Glu Met Leu Lys His Gly Leu Ile Ser Asn Thr Ser His Trp
 195 200 205
 Ala Glu Leu Leu Ala Phe Asp Thr Glu Lys Met Asp Tyr Gly Tyr Leu
 210 215 220
 Lys Lys Leu Val Gly His Ser Val Gln Val Lys Glu Asp Ile Val Glu
 225 230 235 240
 Gln Asp Pro Phe Glu His Gly Ile Arg Lys Ala Leu Asn Leu Gly His
 245 250 255
 Thr Val Gly His Ala Phe Glu Ser Leu Ala Leu Ala Glu Asn Arg Pro
 260 265 270
 Val Leu His Gly Tyr Ala Val Ala Trp Gly Ile Val Cys Glu Leu Tyr
 275 280 285
 Leu Ser His Leu Lys Ala Gly Phe Pro Lys Glu Lys Met Arg Gln Thr
 290 295 300
 Ile Gln Phe Ile Lys Asp Asn Tyr Gly Ala Phe His Phe Asp Cys Lys
 305 310 315 320
 Gln Tyr Asp Arg Leu Tyr Glu Phe Met Gln His Asp Lys Lys Asn Ser
 325 330 335
 Ala Gly Val Ile Asn Phe Thr Leu Leu Lys Glu Ile Gly Asp Ile Ser
 340 345 350
 Ile Asn Arg Thr Ala Asp Lys Asp Thr Ile Phe Glu Met Phe Asp Phe
 355 360 365
 Tyr Arg Glu Cys Met Gly Met
 370 375

<210> 7115

<211> 294

<212> PRT

<213> B.fragilis

<400> 7115

Thr Tyr Ile Cys Cys Leu Lys Gln Thr Phe Met Lys Thr Asp Arg Leu
 1 5 10 15
 Leu Ala Asp Thr Lys Thr Ile Arg Tyr Glu Glu Thr Asp Leu Ala Ser
 20 25 30
 Leu Ile Ser Ala Pro Tyr His Phe Arg Cys Gly Ile Tyr Leu Ile Cys
 35 40 45
 Thr Gln Gly Glu Ala Val Val Ser Thr Gly Val Gln Lys Tyr Ile Phe
 50 55 60
 Asn Glu Gln Thr Glu Leu Ile Phe Leu Thr Gly Gly Leu Leu Gln Val
 65 70 75 80
 Leu Glu Thr Ser Gly Asp Leu Gln Val Lys Met Leu Met Phe Pro Lys
 85 90 95
 Glu Ala Phe Leu Asn Ala Met Leu Pro Ile Asp Thr Pro Tyr Phe Asn
 100 105 110
 Tyr Thr His Glu His Pro Cys Tyr His His Thr Ala Asp Glu Arg Ser
 115 120 125
 Gln Lys Thr Trp Arg Gln Ile Asn Leu Trp Met Asp Met Ala Gln Met
 130 135 140
 Leu Phe Thr Glu Pro Met Pro Gln Phe Arg Gly Gln Gln Glu His Asn
 145 150 155 160
 Phe Leu Gln Ser Leu Leu Met Trp Leu Phe Asn Thr Ile Pro Glu Lys
 165 170 175
 Leu Ala Val Ser Lys Gln Tyr Ser Arg Thr Gln Leu Leu Cys His Arg

	180		185		190
Phe Met Gln Leu Ile Arg Glu Tyr Ser Met His Glu His Gln Val Ala					
	195		200		205
Phe Tyr Ala Glu Lys Leu Cys Ile Ser Ser Arg Tyr Leu His Lys Ile					
	210		215		220
Thr Val Arg His Leu Asp Gly Lys Lys Pro Lys Gln Leu Ile Asp Glu					
	225		230		235
Gln Leu Val Ala Glu Ile Lys Val Leu Leu Asn Glu Pro Arg Leu Ser					
		245		250	255
Val Thr Glu Ile Ala Glu Gln Leu His Phe Pro Asp Gln Ser Tyr Leu					
	260		265		270
Thr His Phe Phe Lys Lys Asn Thr Gly Ile Ser Pro Lys Glu Phe Arg					
	275		280		285
Ala Ile Lys Asn Leu Gly					
	290				

<210> 7116
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 7116

Ser Ile Thr Cys Ser Pro His Pro Gln Asn Gln Gln Leu Lys Lys Met					
1	5		10		15
Asp Asp Thr Phe Asp Ile Thr Tyr Lys Ala Leu Phe Arg Arg Tyr Tyr					
	20		25		30
Pro Asn Leu Met Phe Tyr Ala Thr Arg Leu Val Gly Asp Glu Glu Ala					
	35		40		45
Glu Asp Val Val Gln Asp Val Phe Val Glu Leu Trp Lys Arg Arg Asp					
	50		55		60
Ser Met Val Ile Gly Asp Gln Ile Gln Ala Phe Leu Tyr Arg Ala Val					
	65		70		75
Tyr Thr Arg Ala Leu Asn Val Leu Lys His Arg Ser Ile Glu Asp Gly					
	85		90		95
Tyr Cys Ala Ala Val Lys Glu Ile Asn Gln Lys Arg Ala Glu Phe Tyr					
	100		105		110
Gln Pro Asp Asn Asn Glu Val Ile Arg Arg Ile Glu Asp Arg Glu Leu					
	115		120		125
Arg Asn Glu Ile Tyr Gln Ala Ile Asn Glu Leu Pro Asp Lys Cys Lys					
	130		135		140
Glu Val Phe Lys Leu Ser Tyr Leu His Glu Met Lys Asn Lys Glu Ile					
	145		150		155
Ala Asp Val Met Gly Val Ser Leu Arg Thr Val Glu Ala His Met Tyr					
	165		170		175
Lys Ala Leu Lys Phe Leu Arg Asn Arg Leu Gly His Leu Trp Phe Leu					
	180		185		190
Phe Leu Leu Phe Phe Ile Lys					
	195				

<210> 7117
 <211> 478
 <212> PRT
 <213> B.fragilis

<400> 7117

Leu Phe Ser Arg Thr Lys Met Ile Asn Asn Tyr Leu Glu Arg Gln Ile					
1	5		10		15
Lys Glu Asn Phe Ser Tyr Gln Pro Thr Phe Glu Gln Glu Ile Ala Val					
	20		25		30

Lys Ser Leu Ser Glu Phe Leu Leu Ser Thr Ala Asn Asp Thr Val Phe
 35 40 45
 Val Leu Arg Gly Tyr Ala Gly Thr Gly Lys Thr Ser Leu Val Gly Ala
 50 55 60
 Leu Val Lys Ala Met Asp Lys Leu Gln Gln Lys Ser Val Leu Leu Ala
 65 70 75 80
 Pro Thr Gly Arg Ala Ala Lys Val Phe Ser Ala Tyr Ala Gly His Pro
 85 90 95
 Ala Phe Thr Ile His Lys Lys Ile Tyr Arg Gln Gln Ser Phe Ser Asn
 100 105 110
 Glu Val Ser Asn Phe Ser Ile Asn Asp Asn Leu Thr Thr His Thr Leu
 115 120 125
 Tyr Ile Val Asp Glu Ala Ser Met Ile Ser Asn Glu Gly Leu Ser Gly
 130 135 140
 Ser Met Phe Gly Thr Gly Arg Leu Leu Asp Asp Leu Val Glu Phe Val
 145 150 155 160
 Tyr Ser Gly Val Gly Cys Arg Leu Leu Leu Met Gly Asp Thr Ala Gln
 165 170 175
 Leu Pro Pro Val Gly Glu Glu Gln Ser Pro Ala Leu Ala Thr Glu Ala
 180 185 190
 Leu Lys Gly Tyr Gly Leu Asn Val Ile Glu Val Asp Leu Thr Gln Val
 195 200 205
 Val Arg Gln Val Gln Ser Ser Gly Ile Leu Trp Asn Ala Thr Gln Ile
 210 215 220
 Arg Gln Leu Ile Ala Glu Asp Glu Cys Phe Ser Leu Pro Lys Ile Lys
 225 230 235 240
 Val Ser Gly Phe Pro Asp Ile Gln Val Val Arg Gly Asp Glu Leu Ile
 245 250 255
 Asp Thr Leu Thr Gly Cys Tyr Glu Lys Asp Gly Met Asp Glu Thr Ile
 260 265 270
 Val Val Cys Arg Ser Asn Lys Arg Ala Asn Ile Tyr Asn Lys Gly Ile
 275 280 285
 Arg Ala Gln Ile Leu Tyr Arg Glu Asp Glu Leu Asn Thr Gly Asp Leu
 290 295 300
 Leu Met Val Ala Lys Asn Asn Tyr Phe Trp Thr Glu Lys Tyr Lys Glu
 305 310 315 320
 Met Asp Phe Ile Ala Asn Gly Glu Ile Ala Val Val Arg Arg Val Arg
 325 330 335
 Arg Thr Arg Glu Leu Tyr Gly Phe Arg Phe Ala Glu Val Leu Leu Ala
 340 345 350
 Phe Pro Asp Gln Asn Asp Phe Glu Leu Glu Ala Asn Leu Leu Leu Asp
 355 360 365
 Thr Leu His Ser Asp Ala Pro Ala Leu Pro Lys Thr Glu Asn Asp Arg
 370 375 380
 Leu Phe Tyr Ser Val Leu Glu Asp Tyr Val Asp Ile Thr Val Lys Arg
 385 390 395 400
 Glu Arg Met Lys Lys Met Lys Ala Asp Pro His Tyr Asn Ala Leu Gln
 405 410 415
 Val Lys Tyr Ala Tyr Ala Val Thr Cys His Lys Ala Gln Gly Gly Gln
 420 425 430
 Trp Gln Asn Val Phe Leu Asp Gln Gly Tyr Met Ser Asp Glu Tyr Leu
 435 440 445
 Thr Pro Asp Tyr Phe Arg Trp Leu Tyr Thr Ala Phe Thr Arg Ala Ser
 450 455 460
 Lys Thr Leu Tyr Leu Val Asn Tyr Pro Glu Glu Gln Ile Glu
 465 470 475

<210> 7118

<211> 65

<212> PRT

<213> B.fragilis

<400> 7118

Phe	Gly	Tyr	Arg	Asn	Gln	Leu	Pro	Arg	Gln	Asn	Asn	Arg	Gln	Phe	Ile
1				5					10					15	
Leu	Ser	Lys	Asn	Met	Asn	Ile	Ile	Lys	Asp	Thr	Asp	Leu	Gly	Ser	Thr
			20					25					30		
Ser	Gln	Thr	Gln	Asn	Asp	His	Pro	Asn	Phe	Gly	Val	Gly	Arg	Asn	Arg
		35					40					45			
Arg	His	Thr	Asn	Val	Leu	His	Val	Leu	Thr	Asn	His	Lys	Phe	Ile	Pro
	50					55					60				
Gln															
65															

<210> 7119

<211> 766

<212> PRT

<213> B.fragilis

<400> 7119

Tyr	Pro	Tyr	Ser	Asn	Thr	Leu	Ile	His	Thr	Met	Arg	Lys	Ile	Leu	Leu
1				5					10					15	
Thr	Ala	Cys	Leu	Ile	Ala	Cys	Ser	Leu	Met	Ala	Glu	Ala	Lys	Asp	Trp
			20					25					30		
Thr	Gln	Tyr	Val	Asn	Pro	Leu	Met	Gly	Thr	Gln	Ser	Ser	Phe	Glu	Leu
		35					40					45			
Ser	Thr	Gly	Asn	Thr	Tyr	Pro	Ala	Ile	Ala	Arg	Pro	Trp	Gly	Met	Asn
	50					55				60					
Phe	Trp	Thr	Pro	Gln	Thr	Gly	Lys	Met	Gly	Asp	Gly	Trp	Gln	Tyr	Thr
65					70					75				80	
Tyr	Thr	Ala	Asn	Lys	Ile	Arg	Gly	Phe	Lys	Gln	Thr	His	Gln	Pro	Ser
				85					90					95	
Pro	Trp	Ile	Asn	Asp	Tyr	Gly	Gln	Phe	Ser	Ile	Met	Pro	Val	Thr	Gly
			100					105					110		
Lys	Leu	Glu	Phe	Asp	Glu	Glu	Lys	Arg	Ala	Ser	Trp	Phe	Ser	His	Lys
		115					120					125			
Gly	Glu	Ile	Ala	Thr	Pro	Ser	Tyr	Tyr	Lys	Val	Tyr	Leu	Ala	Glu	His
	130					135					140				
Asp	Val	Val	Thr	Glu	Met	Thr	Pro	Thr	Glu	Arg	Ala	Val	Leu	Phe	Arg
145					150					155					160
Phe	Thr	Phe	Pro	Glu	Asn	Glu	His	Ser	Tyr	Ile	Val	Val	Asp	Ala	Phe
				165					170					175	
Asp	Lys	Gly	Ser	Tyr	Val	Lys	Val	Ile	Pro	Glu	Glu	Asn	Lys	Ile	Ile
			180					185					190		
Gly	Tyr	Thr	Thr	Arg	Asn	Ser	Gly	Gly	Val	Pro	Glu	Asn	Phe	Lys	Asn
		195				200						205			
Tyr	Phe	Val	Ile	Glu	Phe	Asp	Lys	Pro	Phe	Thr	Tyr	Lys	Gly	Thr	Phe
	210					215					220				
Ala	Asp	Lys	Lys	Leu	Glu	Glu	Gly	Asn	Leu	Glu	Gln	Lys	Ala	Asp	His
225					230					235				240	
Thr	Gly	Ala	Ile	Ile	Gly	Phe	Ser	Thr	Arg	Lys	Gly	Glu	Ile	Val	His
			245						250					255	
Ala	Arg	Ile	Ala	Ser	Ser	Phe	Ile	Asn	Phe	Glu	Gln	Ala	Ala	Gln	Asn
			260					265						270	
Leu	Lys	Glu	Leu	Gly	Asn	Asp	Ser	Phe	Glu	Gln	Leu	Ala	Gln	Lys	Gly
		275					280					285			
Asn	Asp	Ala	Trp	Asn	Asn	Val	Leu	Gly	Lys	Ile	Gln	Gly	Glu	Gly	Gly
	290					295					300				

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300

Asn	Leu	Asp	Gln	Tyr	Arg	Thr	Phe	Tyr	Ser	Cys	Leu	Tyr	Arg	Ser	Leu
305					310					315					320
Leu	Phe	Pro	Arg	Lys	Phe	Tyr	Glu	Phe	Thr	Ala	Asp	Gly	Gln	Pro	Ile
				325					330					335	
His	Tyr	Ser	Pro	Tyr	Asn	Gly	Gln	Val	Leu	Pro	Gly	Tyr	Met	Tyr	Thr
			340				345					350			
Asp	Thr	Gly	Phe	Trp	Asp	Thr	Phe	Arg	Cys	Leu	Phe	Pro	Phe	Leu	Asn
		355				360					365				
Leu	Met	Tyr	Pro	Ser	Val	Asn	Lys	Glu	Ile	Gln	Glu	Gly	Leu	Ile	Asn
	370					375				380					
Thr	Tyr	Lys	Glu	Ser	Gly	Phe	Phe	Pro	Glu	Trp	Ala	Ser	Pro	Gly	His
385					390					395					400
Arg	Gly	Cys	Met	Ile	Gly	Asn	Asn	Ser	Ala	Ser	Val	Leu	Val	Asp	Ala
				405					410					415	
Tyr	Met	Lys	Gly	Val	Lys	Val	Asp	Asp	Val	Lys	Thr	Leu	Tyr	Glu	Gly
			420					425				430			
Leu	Ile	His	Gly	Thr	Glu	Asn	Val	His	Pro	Glu	Val	Ser	Ser	Thr	Gly
		435					440					445			
Arg	Leu	Gly	Tyr	Gln	Tyr	Tyr	Asn	Lys	Leu	Gly	Tyr	Val	Pro	Tyr	Asp
	450					455				460					
Val	Lys	Ile	Asn	Glu	Asn	Thr	Ala	Arg	Thr	Leu	Glu	Tyr	Ala	Tyr	Asp
465					470					475					480
Asp	Trp	Cys	Ile	Tyr	Gln	Leu	Ala	Lys	Ala	Leu	Asn	Arg	Pro	Lys	Lys
				485					490					495	
Glu	Ile	Glu	Leu	Phe	Ala	Lys	Arg	Ala	Met	Asn	Tyr	Arg	Asn	Val	Phe
			500					505				510			
Asp	Lys	Glu	Ser	Lys	Leu	Met	Arg	Gly	Arg	Asn	Glu	Asn	Gly	Gln	Phe
		515					520					525			
Gln	Ser	Pro	Phe	Ser	Pro	Leu	Lys	Trp	Gly	Asp	Ala	Phe	Thr	Glu	Gly
	530					535				540					
Asn	Ser	Trp	His	Tyr	Ser	Trp	Ser	Val	Phe	His	Asp	Pro	Gln	Gly	Leu
545					550					555					560
Ile	Asp	Leu	Met	Gly	Gly	Lys	Lys	Met	Phe	Ile	Thr	Met	Leu	Asp	Ser
				565					570					575	
Val	Phe	Ala	Val	Pro	Pro	Val	Phe	Asp	Asp	Ser	Tyr	Tyr	Gly	Gln	Val
			580					585					590		
Ile	His	Glu	Ile	Arg	Glu	Met	Thr	Val	Met	Asn	Met	Gly	Asn	Tyr	Ala
		595					600					605			
His	Gly	Asn	Gln	Pro	Ile	Gln	His	Met	Ile	Tyr	Leu	Tyr	Asn	Tyr	Ala
	610					615					620				
Gly	Gln	Pro	Trp	Lys	Ala	Gln	Tyr	Trp	Leu	Arg	Gln	Val	Met	Asp	Arg
625					630					635					640
Met	Tyr	Thr	Pro	Gly	Pro	Asp	Gly	Tyr	Cys	Gly	Asp	Glu	Asp	Asn	Gly
				645					650					655	
Gln	Thr	Ser	Al												

<210> 7120
 <211> 430
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (70)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 7120

Arg	Gln	Lys	Arg	Ile	Asp	Phe	Leu	Phe	Leu	Gln	Pro	Asn	Ile	Thr	Ile
1				5				10					15		
Glu	Ile	Lys	Thr	Met	Arg	Tyr	Leu	Leu	Ser	Ala	Pro	Ser	Gln	Ile	Lys
			20					25					30		
Ala	Thr	Ile	Gln	Leu	Pro	Ala	Ser	Lys	Ser	Ile	Ser	Asn	Arg	Ala	Leu
			35					40					45		
Ile	Ile	His	Ala	Leu	Ser	Lys	Gly	Asp	Asp	Val	Pro	Ser	Asn	Leu	Ser
			50				55				60				
Asp	Cys	Asp	Asp	Thr	Xaa	Val	Met	Ile	Lys	Ala	Leu	Thr	Glu	Gly	Asn
65					70					75					80
Glu	Val	Ile	Asp	Ile	Leu	Ala	Ala	Gly	Thr	Ala	Met	Arg	Phe	Leu	Thr
			85						90						95
Ala	Tyr	Leu	Ser	Thr	Pro	Gly	Ile	His	Thr	Ile	Thr	Gly	Thr	Glu	
			100				105						110		
Arg	Met	Gln	Gln	Arg	Pro	Ile	Gln	Ile	Leu	Val	Asn	Ala	Leu	Arg	Glu
			115				120						125		
Leu	Gly	Ala	His	Ile	Glu	Tyr	Val	Arg	Asn	Glu	Gly	Phe	Pro	Pro	Leu
			130				135					140			
Arg	Ile	Glu	Gly	Arg	Glu	Leu	Thr	Gly	Ser	Glu	Ile	Thr	Leu	Lys	Gly
145					150					155					160
Asn	Val	Ser	Ser	Gln	Tyr	Ile	Ser	Ala	Leu	Leu	Met	Ile	Gly	Pro	Val
				165					170					175	
Leu	Lys	Asn	Gly	Leu	Gln	Leu	Arg	Leu	Thr	Gly	Glu	Ile	Val	Ser	Arg
			180					185					190		
Pro	Tyr	Ile	Asn	Leu	Thr	Leu	Gln	Leu	Met	Lys	Asp	Phe	Gly	Ala	Ser
			195				200					205			
Ala	Ser	Trp	Thr	Ser	Asp	Gln	Asn	Ile	Gln	Val	Asp	Pro	Gln	Pro	Tyr
			210			215					220				
His	Cys	Leu	Pro	Phe	Thr	Val	Glu	Ser	Asp	Trp	Ser	Ala	Ala	Ser	Tyr
225					230					235					240
Trp	Tyr	Gln	Ile	Ala	Ala	Leu	Ser	Pro	Gln	Ala	Asp	Ile	Glu	Leu	Thr
				245						250					255
Gly	Leu	Phe	Arg	His	Ser	Tyr	Gln	Gly	Asp	Ser	Arg	Gly	Ala	Glu	Val
			260					265					270		
Phe	Ala	Arg	Leu	Gly	Val	Ala	Thr	Glu	Tyr	Thr	Glu	Thr	Gly	Ile	Arg
			275				280					285			
Leu	Lys	Lys	Asn	Gly	Thr	Cys	Val	Glu	Arg	Leu	Asp	Glu	Asp	Phe	Val
			290			295					300				
Asp	Ile	Pro	Asp	Leu	Ala	Gln	Thr	Phe	Val	Val	Thr	Cys	Ala	Leu	Leu
305					310					315					320
Asn	Val	Pro	Phe	Arg	Phe	Thr	Gly	Leu	Gln	Ser	Leu	Lys	Ile	Lys	Glu
				325					330					335	
Thr	Asp	Arg	Ile	Glu	Ala	Leu	Lys	Thr	Glu	Met	Lys	Lys	Leu	Gly	Tyr
			340					345					350		
Ile	Leu	His	Asp	Lys	Asn	Asp	Ser	Ile	Leu	Ser	Trp	Asp	Gly	Glu	Arg
			355				360					365			
Val	Glu	Gln	Gln	Thr	Cys	Pro	Val	Ile	Lys	Thr	Tyr	Glu	Asp	His	Arg
			370			375					380				

Met Ala Met Ala Phe Ala Pro Ala Ala Ile His Tyr Pro Thr Ile Gln
 385 390 395 400
 Ile Asp Glu Pro Gln Val Val Ser Lys Ser Tyr Pro Gly Tyr Trp Asp
 405 410 415
 Asp Leu Arg Lys Ala Gly Phe Gly Ile Lys Val Gly Glu Glu
 420 425 430

<210> 7121

<211> 876

<212> PRT

<213> B.fragilis

<400> 7121

Ile Tyr Arg Ser Met Leu Thr Ala Lys Glu Thr Arg Asp Ser Phe Lys
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 Asn Phe Phe Glu Ser Lys Gly His Gln Ile Val Pro Ser Ala Pro Met
 20 25 30
 Val Ile Lys Asp Asp Pro Thr Leu Met Phe Thr Asn Ala Gly Met Asn
 35 40 45
 Gln Phe Lys Asp Ile Ile Leu Gly Asn His Pro Ala Lys Tyr His Arg
 50 55 60
 Val Ala Asp Ser Gln Lys Cys Leu Arg Val Ser Gly Lys His Asn Asp
 65 70 75 80
 Leu Glu Glu Val Gly His Asp Thr Tyr His His Thr Met Phe Glu Met
 85 90 95
 Leu Gly Asn Trp Ser Phe Gly Asp Tyr Phe Lys Lys Glu Ala Ile Ser
 100 105 110
 Trp Ala Trp Glu Tyr Leu Val Asp Val Leu Lys Leu Asn Pro Glu His
 115 120 125
 Leu Tyr Ala Thr Val Phe Glu Gly Ser Pro Glu Glu Gly Leu Glu Arg
 130 135 140
 Asp Asn Glu Ala Ala Ser Tyr Trp Glu Gln Tyr Leu Pro Lys Asp His
 145 150 155 160
 Ile Ile Asn Gly Asn Lys His Asp Asn Phe Trp Glu Met Gly Asp Thr
 165 170 175
 Gly Pro Cys Gly Pro Cys Ser Glu Ile His Ile Asp Leu Arg Pro Ala
 180 185 190
 Glu Glu Arg Ala Lys Ile Ser Gly Arg Asp Leu Val Asn His Asp His
 195 200 205
 Pro Gln Val Ile Glu Ile Trp Asn Leu Val Phe Met Gln Tyr Asn Arg
 210 215 220
 Lys Ala Asp Ser Thr Leu Glu Pro Leu Pro Ala Lys Val Ile Asp Thr
 225 230 235 240
 Gly Met Gly Phe Glu Arg Leu Cys Met Ala Leu Gln Gly Lys Thr Ser
 245 250 255
 Asn Tyr Asp Thr Asp Val Phe Gln Pro Leu Ile Lys Ala Ile Ala Gln
 260 265 270
 Met Ala Gly Thr Glu Tyr Gly Lys Asn Glu Gln Asn Asp Ile Ala Met
 275 280 285
 Arg Val Ile Ala Asp His Ile Arg Thr Ile Ala Phe Ser Ile Thr Asp
 290 295 300
 Gly Gln Leu Pro Ser Asn Ala Lys Ala Gly Tyr Val Ile Arg Arg Ile
 305 310 315 320
 Leu Arg Arg Ala Val Arg Tyr Gly Tyr Thr Phe Leu Gly Gln Lys Gln
 325 330 335
 Ala Phe Met Tyr Lys Leu Leu Pro Val Leu Ile Asp Ser Met Gly Asp
 340 345 350
 Ala Tyr Pro Glu Leu Ile Ala Gln Lys Glu Leu Ile Glu Lys Val Ile
 355 360 365

Lys Glu Glu Glu Glu Ser Phe Leu Arg Thr Leu Glu Thr Gly Ile Arg
 370 375 380
 Leu Leu Asp Lys Thr Met Ala Asp Thr Lys Ala Asn Gly Lys Thr Glu
 385 390 395 400
 Ile Ser Gly Lys Asp Ala Phe Thr Leu Tyr Asp Thr Phe Gly Phe Pro
 405 410 415
 Leu Asp Leu Thr Glu Leu Ile Leu Arg Glu Asn Gly Met Thr Val Asn
 420 425 430
 Val Glu Glu Phe Asp Ala Glu Met Gln Gln Gln Lys Gln Arg Ala Arg
 435 440 445
 Asn Ala Ala Ala Ile Glu Thr Gly Asp Trp Ile Ile Leu Lys Glu Gly
 450 455 460
 Thr Thr Glu Phe Val Gly Tyr Asp Tyr Thr Glu Tyr Glu Thr Ser Ile
 465 470 475 480
 Leu Arg Tyr Arg Gln Val Lys Gln Lys Asn Gln Thr Leu Tyr Gln Ile
 485 490 495
 Val Leu Asp Tyr Thr Pro Phe Tyr Ala Glu Ser Gly Gly Gln Val Gly
 500 505 510
 Asp Thr Gly Val Leu Val Asn Glu Phe Glu Thr Ile Glu Val Ile Asp
 515 520 525
 Thr Lys Lys Glu Asn Asn Leu Pro Ile His Ile Thr Lys Asn Leu Pro
 530 535 540
 Glu His Pro Glu Ala Pro Met Met Ala Cys Val Asp Thr Asp Lys Arg
 545 550 555 560
 Ala Ala Cys Ala Ala Asn His Ser Ala Thr His Leu Leu Asp Glu Ala
 565 570 575
 Leu Arg Glu Val Leu Gly Glu His Val Glu Gln Lys Gly Ser Leu Val
 580 585 590
 Thr Pro Asp Ser Leu Arg Phe Asp Phe Ser His Phe Gln Lys Val Thr
 595 600 605
 Asp Glu Glu Leu Arg Lys Val Glu His Leu Val Asn Ala Lys Ile Arg
 610 615 620
 Ala Asn Val Pro Leu Gln Glu His Arg Asn Ile Pro Ile Glu Glu Ala
 625 630 635 640
 Lys Glu Leu Gly Ala Ile Ala Leu Phe Gly Glu Lys Tyr Gly Asp His
 645 650 655
 Val Arg Val Ile Gln Phe Gly Ser Ser Ile Glu Phe Cys Gly Gly Thr
 660 665 670
 His Val Ala Ala Thr Gly Asn Ile Gly Met Val Lys Ile Ser Glu
 675 680 685
 Ser Ser Val Ala Ala Gly Val Arg Arg Ile Glu Ala Tyr Thr Gly Ala
 690 695 700
 Arg Val Glu Glu Met Leu Asp Thr Ile Gln Asp Thr Leu Ser Asp Leu
 705 710 715 720
 Lys Ala Leu Phe Asn Asn Ala Pro Asp Leu Gly Val Ala Ile Arg Lys
 725 730 735
 Tyr Ile Asp Glu Asn Ala Gly Leu Lys Lys Gln Val Glu Asp Phe Met
 740 745 750
 Lys Glu Lys Glu Ala Ala Val Lys Glu Arg Leu Leu Lys Asn Val Gln
 755 760 765
 Glu Ile Asn Gly Ile Lys Val Ile Lys Phe Cys Leu Pro Met Pro Ala
 770 775 780
 Glu Val Val Lys Asn Ile Ala Phe Gln Leu Arg Gly Glu Ile Thr Glu
 785 790 795 800
 Asn Leu Phe Phe Val Ala Gly Thr Val Asp Ala Asn Lys Pro Met Leu
 805 810 815
 Thr Val Met Ile Ser Asp Asn Leu Val Ala Gly Gly Leu Lys Ala Gly
 820 825 830
 Asn Leu Val Lys Glu Ala Ala Lys Leu Ile Gln Gly Gly Gly Gly Gly

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835 840 845
 Gln Pro His Phe Ala Thr Ala Gly Gly Lys Asn Pro Asp Gly Leu Asn
 850 855 860
 Ala Ala Val Glu Lys Val Leu Glu Leu Ala Gly Ile
 865 870 875

<210> 7122
 <211> 146
 <212> PRT
 <213> B.fragilis

<400> 7122
 Glu Lys Ala Ile Phe Val Thr Leu Asn Leu Asp Lys Met Lys Ala Leu
 1 5 10 15
 Leu Pro Val Phe Cys Arg Pro Leu Gly Tyr Val Ile Leu Val Ile Ser
 20 25 30
 Met Phe Ile Pro Phe Leu Leu Leu Met Gln Gly Met Val Thr Asp Ser
 35 40 45
 Asn Leu Leu Phe Tyr Lys Glu Cys Ile Lys Leu Leu Met Ile Leu Gly
 50 55 60
 Ala Met Met Ile Ile Phe Ala Leu Ser Arg Asn Glu Gly Arg Glu Thr
 65 70 75 80
 Glu Ile Ile Arg Asn Lys Ala Thr Arg Asn Ala Ile Phe Leu Thr Val
 85 90 95
 Leu Phe Leu Phe Gly Gly Met Leu Tyr Arg Val Ala Thr Gly Asp Ile
 100 105 110
 Met Thr Val Asp Thr Ser Ser Phe Leu Ile Phe Leu Ile Ile Asn Val
 115 120 125
 Leu Cys Leu Glu Phe Gly Met Gln Lys Ala Arg Ile Asp Lys Ile Phe
 130 135 140
 Lys Arg
 145

<210> 7123
 <211> 656
 <212> PRT
 <213> B.fragilis

<400> 7123
 Arg His Asp Met Lys Phe Val Asn Arg Phe Phe Met Ile Leu Val Ala
 1 5 10 15
 Leu Cys Leu Val Cys Pro Gly Val Ser Ala Val Val Asn Pro Lys Pro
 20 25 30
 Phe Val Ile Pro Glu Leu Lys Glu Trp Lys Gly Ala Glu Gly Ala Phe
 35 40 45
 Val Pro Thr Glu Thr Thr Lys Ile Val Cys Pro Ala Asn Gln Pro Glu
 50 55 60
 Leu Leu Arg Ile Ala Arg Met Leu Ala Asp Asp Cys Glu Thr Met Phe
 65 70 75 80
 Gly His Lys Pro Glu Val Val Gln Gly Lys Gly Gly Ala Gly Asp Val
 85 90 95
 Ile Leu Ala Ile Arg Ala Asp Lys Lys Leu Gly Lys Glu Gly Tyr Thr
 100 105 110
 Val Lys Val Thr Asp Arg Ile Leu Leu Thr Ala Pro Glu Ser Ile Gly
 115 120 125
 Val Tyr Trp Gly Thr Arg Thr Leu Leu Gln Ile Ala Glu Gln Ser Glu
 130 135 140
 Asn His Gln Phe Pro Lys Gly Thr Leu Arg Asp Phe Pro Asp Tyr Ala
 145 150 155 160

Met	Arg	Gly	Phe	Met	Ile	Asp	Cys	Gly	Arg	Lys	Phe	Ile	Pro	Leu	Ser
				165					170					175	
Phe	Leu	Gln	Asp	Tyr	Val	Lys	Ile	Met	Ala	Tyr	Tyr	Lys	Met	Asn	Thr
			180					185					190		
Leu	Gln	Ile	His	Leu	Asn	Asp	Asn	Gly	Phe	Lys	Gln	Phe	Phe	Gly	His
		195					200					205			
Asp	Trp	Ser	Lys	Thr	Tyr	Ala	Ala	Phe	Arg	Leu	Glu	Ser	Asp	Thr	Tyr
	210					215					220				
Pro	Gly	Leu	Ala	Ala	Glu	Asp	Gly	Tyr	Tyr	Thr	Lys	Arg	Glu	Phe	Ile
225					230					235					240
Asp	Leu	Gln	Lys	Leu	Ala	Glu	Asn	Leu	Tyr	Val	Glu	Ile	Ile	Pro	Glu
			245						250					255	
Ile	Asp	Ala	Pro	Ala	His	Thr	Leu	Ala	Phe	Thr	His	Tyr	Lys	Pro	Glu
		260						265					270		
Ile	Gly	Ser	Lys	Glu	Tyr	Gly	Met	Asp	His	Leu	Asp	Leu	Phe	Asn	Pro
		275					280					285			
Glu	Thr	Tyr	Lys	Phe	Met	Asp	Gly	Leu	Phe	Lys	Glu	Tyr	Leu	Glu	Gly
	290					295					300				
Asp	Glu	Pro	Val	Phe	Arg	Gly	Lys	Lys	Val	His	Ile	Gly	Thr	Asp	Glu
305					310					315					320
Tyr	Ser	Asn	Lys	Lys	Lys	Asp	Val	Val	Glu	Lys	Phe	Arg	Ala	Phe	Thr
			325						330					335	
Asp	His	Tyr	Ile	Arg	Tyr	Val	Glu	Ser	Phe	Gly	Lys	Gln	Ala	Cys	Val
		340						345					350		
Trp	Gly	Ala	Leu	Thr	His	Ala	Lys	Gly	Asp	Thr	Pro	Val	Lys	Ser	Glu
		355					360					365			
Asn	Val	Ile	Met	Ser	Ala	Trp	Tyr	Asn	Gly	Tyr	Ala	Asn	Pro	Lys	Asp
	370					375					380				
Met	Ile	Glu	Gln	Gly	Tyr	Lys	Leu	Ile	Ser	Ile	Pro	Asp	Gly	Leu	Val
385					390					395					400
Tyr	Ile	Val	Pro	Ala	Ala	Gly	Tyr	Tyr	Tyr	Asp	Tyr	Leu	Asn	Thr	Lys
			405						410					415	
Tyr	Leu	Tyr	Glu	Asn	Trp	Thr	Pro	Val	Gln	Ile	Gly	Lys	Ala	Val	Phe
		420					425					430			
Pro	Glu	Lys	Asp	Pro	Ser	Ile	Leu	Gly	Gly	Met	Phe	Ala	Val	Trp	Asn
		435					440				445				
Asp	His	Val	Gly	Asn	Gly	Ile	Ser	Thr	Lys	Asp	Ile	His	His	Arg	Val
	450					455				460					
Tyr	Pro	Ala	Leu	Gln	Thr	Leu	Ala	Val	Lys	Met	Trp	Thr	Gly	Lys	Asp
465					470					475					480
Val	Ser	Val	Pro	Tyr	Ala	Asp	Phe	Asp	Lys	Gln	Arg	Asn	Ala	Ile	Ser
			485						490					495	
Glu	Ala	Pro	Gly	Val	Asn	Gln	Leu	Gly	Arg	Ile	Gly	Thr	Thr	Pro	Gly
		500						505					510		
Leu	Val	Tyr	Glu	Gln	Ala	Ser	Val	Ala	Pro	Asn	Ser	Glu	Thr	Pro	His
		515					520					525			
Arg	Glu	Ile	Gly	Tyr	Asp	Tyr	Leu	Val	Thr	Phe	Asp	Ile	Asp	Gly	Ala
	530					535					540				
Asn	Glu	Ala	Lys	Gly	Thr	Glu	Leu	Phe	Arg	Ser	Pro	Asp	Ala	Val	Phe
545					550					555					560
Tyr	Leu	Ser	Asp	Pro	Ile	Arg	Gly	Met	Leu	Gly	Phe	Ala	Arg	Asp	Gly
			565					570						575	
Tyr	Leu	Asn	Thr	Phe	Ser	His	Arg	Ile	His	Lys	Gly	Glu	Lys	Ala	Thr
		580						585					590		
Ile	Gly	Ile	Ser	Gly	Asp	Asn	Lys	Ser	Thr	Arg	Leu	Leu	Ile	Asn	Gly
		595					600					605			
Gln	Val	Val	Glu	Glu	Met	Asn	Thr	Gln	Lys	Leu	Tyr	Tyr	Asn	Ala	Gly
	610					615					620				
Lys	Asp	Ser	Met	Asn	Tyr	Val	Arg	Thr	Leu	Val	Phe	Pro	Leu	Glu	Lys

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 7124

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<210> 7125
<211> 499
<212> PRT
<213> B.fragilis
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<400> 7125

Ala	Asn	Leu	Ile	Tyr	Ser	Asp	Ile	Gln	Asn	Cys	Lys	Ile	Asp	Glu	His
1				5					10					15	
Met	Asn	Leu	Arg	Asn	Phe	Phe	Leu	Ala	Ala	Gly	Ile	Ala	Ala	Val	Ala
			20					25					30		
Val	Pro	Val	Trp	Gly	Gln	Lys	Ala	Pro	Glu	Pro	Tyr	Gly	Leu	Thr	Pro
		35					40					45			
Ser	Ala	Arg	Gln	Val	Glu	Trp	Tyr	Asn	Arg	Glu	Met	Ile	Ala	Phe	Phe
	50					55					60				
His	Phe	Gly	Ile	Asn	Thr	Phe	Glu	Glu	Tyr	Val	Asn	Glu	Gly	Asp	Gly
65					70					75				80	
Arg	Ala	Pro	Ala	Ala	Ile	Phe	Asn	Pro	Thr	Ala	Leu	Asp	Cys	Gly	Gln
			85						90					95	
Trp	Met	Arg	Thr	Leu	Gln	Ser	Ala	Gly	Ile	Pro	Ser	Ala	Ile	Ile	Thr
			100					105					110		
Ala	Lys	His	Ala	Asp	Gly	Phe	Cys	Leu	Trp	Pro	Ser	Lys	Tyr	Thr	Asp
		115					120					125			

Tyr Gly Val Lys Asn Ser Ala Trp Lys Asn Gly Lys Gly Asp Val Val
 130 135 140
 Arg Glu Phe Val Asp Ala Cys Glu Glu Tyr Gly Ile Lys Ala Gly Ile
 145 150 155 160
 Tyr Leu Gly Pro His Asp Arg His Glu His Leu Ser Pro Leu Tyr Thr
 165 170 175
 Thr Glu Lys Tyr Lys Gln Tyr Tyr Gly His Gln Leu Glu Glu Leu Met
 180 185 190
 Gly Asp Tyr Gly Lys Val Trp Glu Thr Trp Trp Asp Gly Ala Gly Ala
 195 200 205
 Asp Glu Leu Thr Thr Pro Val Tyr Thr His Trp Tyr Lys Ile Val Arg
 210 215 220
 Glu Lys Gln Pro Asp Cys Val Ile Phe Gly Thr Lys Asn Ser Tyr Pro
 225 230 235 240
 Phe Ala Asp Val Arg Trp Met Gly Asn Glu Ser Gly Lys Ala Gly Asp
 245 250 255
 Pro Cys Trp Ser Thr Thr Asp Ser Val Cys Val Arg Asp Glu Trp Lys
 260 265 270
 Asn Tyr Glu Gly Leu Asn Glu Gly Val Lys Gly Gly Asp Ala Tyr Ile
 275 280 285
 Pro Ala Glu Thr Asp Val Ser Ile Arg Pro Ser Trp Phe Tyr His Ala
 290 295 300
 Glu Glu Asp Ser Arg Val Lys Ser Val Lys Glu Leu Trp Asp Ile Tyr
 305 310 315 320
 Cys Thr Ser Val Gly His Asn Ser Val Leu Leu Leu Asn Phe Pro Pro
 325 330 335
 Asp Arg Arg Gly Leu Ile His Pro Thr Asp Ser Leu His Ala Ala Leu
 340 345 350
 Leu Lys Gln Gly Leu Asp Glu Thr Phe Gly Asn Asn Leu Leu Ala Lys
 355 360 365
 Ala Lys Val Lys Ala Thr Asn Gly Arg Gly Gly Lys Phe Arg Pro Glu
 370 375 380
 Phe Leu Thr Asp Asn Asn Lys Glu Thr Tyr Phe Ala Gly Arg Asp Gly
 385 390 395 400
 Ala Lys Thr Ser Asp Ile Val Phe Thr Leu Ser Arg Gln Thr Glu Phe
 405 410 415
 Asp Cys Leu Met Ile Gln Glu Val Ile Glu Leu Gly His Arg Thr Thr
 420 425 430
 Lys Trp Ser Val Glu Tyr Ser Asn Asp Gly Arg Asn Trp Thr Pro Ile
 435 440 445
 Pro Glu Ala Thr Asp Lys Gln Thr Val Gly Tyr Lys Trp Ile Val Arg
 450 455 460
 Phe Ala Pro Val Lys Ala Lys Gln Val Arg Leu Arg Ile Leu Asp Gly
 465 470 475 480
 Phe Ala Cys Pro Ala Ile His Thr Phe Gly Val Tyr Lys Gln Ser Ala
 485 490 495
 Leu Phe Gln

<210> 7126

<211> 402

<212> PRT

<213> B.fragilis

<400> 7126

Ser Lys Arg Ile Ala Met Thr Asp Arg Gln Asn Ser Arg Arg Phe Leu
 1 5 10 15
 Leu Leu Phe Leu Gly Val Leu Ser Ala Phe Gly Pro Phe Ile Met Asp
 20 25 30

Met Tyr Leu Pro Thr Leu Pro Ala Met Ala Asp Phe Phe His Thr Ser
 35 40 45
 Ser Ser Met Val Gln Leu Gly Leu Thr Thr Ser Met Ile Gly Leu Ala
 50 55 60
 Ala Gly Gln Leu Ile Phe Gly Pro Leu Ser Asp Lys Tyr Gly Arg Arg
 65 70 75 80
 Pro Pro Leu Leu Leu Ala Met Ile Leu Phe Leu Leu Ala Thr Val Gly
 85 90 95
 Cys Ile Phe Ser His Thr Ile Ser Gln Phe Val Thr Ser Arg Phe Leu
 100 105 110
 Gln Gly Ile Ala Gly Ala Gly Gly Val Val Ile Ser Arg Ser Ile Ala
 115 120 125
 Thr Asp Glu Tyr Ser Gly Gln Gln Leu Ala Gly Met Leu Ala Val Ile
 130 135 140
 Gly Gly Ile Asn Gly Ile Ala Thr Val Ile Ala Pro Ile Gly Gly Gly
 145 150 155 160
 Ile Leu Ala Gln Ile Thr Ser Trp Gln Gly Ile Phe Ile Cys Leu Phe
 165 170 175
 Phe Met Gly Val Val Leu Leu Ser Gly Ser Leu His Leu Asn Glu Ser
 180 185 190
 Leu Pro Ala Lys His Arg Gln Thr Val Ser Trp Gln Asp Leu Tyr His
 195 200 205
 Ser Phe Gly Glu Val Leu His Asn Arg Arg Tyr Val Gly Tyr Val Leu
 210 215 220
 Gln Tyr Gly Phe Thr Met Gly Ile Leu Phe Val Asn Ile Ser Ser Ala
 225 230 235 240
 Pro Phe Ile Met Gln Gln His Tyr Gly Leu Ser Pro Leu Ser Phe Ser
 245 250 255
 Leu Cys Phe Gly Ile Asn Ala Ile Ala Met Val Ile Phe Ser Ala Ile
 260 265 270
 Ser Ile Lys Leu Pro Thr Met Glu Arg Ala Leu Tyr Ile Gly Ser Arg
 275 280 285
 Gly Met Leu Ser Val Ser Ala Leu Leu Met Val Phe Leu Ser Leu Gly
 290 295 300
 Cys Asp Phe Trp Ile Tyr Glu Leu Leu Ile Phe Ala Leu Leu Ser Met
 305 310 315 320
 Ile Gly Met Thr Phe Thr Ala Ser Asn Thr Leu Ala Met Glu Cys Glu
 325 330 335
 Arg Arg Asn Ala Gly Ile Ala Ser Ala Leu Leu Gly Ala Thr Gly Phe
 340 345 350
 Ala Phe Gly Gly Ile Val Ser Pro Leu Val Ser Leu Gly Asp Met Met
 355 360 365
 Thr Ser Thr Gly Ile Leu Phe Leu Ala Gly Ser Ala Cys Ala Tyr Ala
 370 375 380
 Cys Thr Arg Tyr Val Leu Ser Pro Ser Val Gln Pro Ser Gly Val Leu
 385 390 395 400
 Tyr His

<210> 7127

<211> 281

<212> PRT

<213> B.fragilis

<400> 7127

Val Leu Ser Ile Leu Leu Thr Thr Ala Gln Val Thr Gly Asn Asn Pro
 1 5 10 15
 Asn Met Pro Asp Arg Ala Ile Ala Glu Thr Ile Asp Phe Gly Lys Ser
 20 25 30

Glu Gln Tyr Thr Leu Ser Ile Arg Leu Ser Thr Asp Gly Phe Ser Phe
 35 40 45
 Ser Ile Tyr Asn Pro Ile His Asp Ser Ser Leu Ser Phe Phe Glu Lys
 50 55 60
 Glu Val Glu Ala Ser Leu Ser Leu Thr Ala Asn Leu Lys Gln Ala Phe
 65 70 75 80
 Arg Glu Leu Asp Phe Leu Asn His Thr Tyr Lys Arg Val Asn Ile Leu
 85 90 95
 Met Ala Asp Lys Arg Phe Thr Leu Ile Pro Leu Glu Leu Phe Glu Asp
 100 105 110
 Asp Gln Ser Glu Met Ile Phe Tyr His Asn His Thr Pro Lys Glu Asn
 115 120 125
 Glu Thr Val Lys Tyr Asn Ile Leu Lys Lys Asn Asn Ala Val Val Ile
 130 135 140
 Phe Gly Met Asp Lys Ser Thr Cys Gln Phe Leu Ser Asp Gln Tyr Pro
 145 150 155 160
 Glu Ala Arg Phe Tyr Ser Gln Ala Ala Pro Leu Ala Glu Tyr Phe Ser
 165 170 175
 Ala Lys Ser Arg Leu Gly Asn Ser Lys Lys Ile Tyr Ala Ser Ile Arg
 180 185 190
 Arg Asp Ala Ile Asp Phe Phe Cys Tyr Glu Arg Gly His Leu Leu Leu
 195 200 205
 Ala Asn Ser Phe Glu Cys Arg Lys Thr Gly Asp Arg Ile Tyr Tyr Leu
 210 215 220
 Leu Tyr Leu Trp Lys Gln Leu Asn Phe Asp Gln Glu Arg Asp Glu Leu
 225 230 235 240
 His Leu Thr Gly Ala Phe Asn Asp Lys Glu Lys Leu Met Gln Glu Leu
 245 250 255
 Arg Lys Tyr Ile Gln Gln Val Phe Ile Met Asn Pro Ala Ser Asn Ile
 260 265 270
 Asp Met Gln Ala Leu Leu Thr Cys Glu
 275 280

<210> 7128

<211> 385

<212> PRT

<213> B.fragilis

<400> 7128

Asn Thr Trp Ile Arg Lys Met Tyr Thr Thr Leu Ser Phe Lys Met Leu
 1 5 10 15
 Arg Ser Gly Pro Ser Leu His Trp His Asn Thr Pro Ser Thr Ala Gln
 20 25 30
 Tyr Ser Leu Gly Glu Asn Asp Lys Cys Phe Gly Gly Asp Lys Asp Lys
 35 40 45
 Trp Leu Arg Phe Ala Asn Thr Leu Arg Leu Arg Leu Ala Leu Arg Val
 50 55 60
 Ser Asn Val Asp Pro Gln Leu Ala Lys Glu Gln Gly Glu Lys Ala Met
 65 70 75 80
 Ala Asp Pro Ala Gly Leu Met Gln Ser Asp Asp Asp Asn Met Lys Gln
 85 90 95
 Thr Pro Lys Tyr Ser Tyr Ile Thr Gly Gly Asn Glu Asn Ile Tyr Thr
 100 105 110
 Leu Leu Tyr Asn Trp Ser Ala Asn Val Val Leu Ser Lys Glu Met Glu
 115 120 125
 Arg Ala Tyr Lys Glu Gln Ser Thr Ile Leu Asp Pro Arg Cys Glu Ile
 130 135 140
 Leu Trp Trp Arg Pro Thr Ala Leu Glu Asp Leu Asn Gln Thr Glu Pro
 145 150 155 160

Lys Glu Asp Met Thr Lys Asp Phe Asn Gly Cys Glu Asn Gly Glu Thr
 165 170 175
 Ser Leu Gly Gly Ser Tyr Thr Thr Thr Tyr Ser Pro Ser Arg Val Phe
 180 185 190
 Ile Lys Gln Asp Gln Lys Lys Leu Asp Arg Lys His Trp Trp Cys Tyr
 195 200 205
 Ala Arg Glu Ile Val Trp Leu Gly Tyr Ser Glu Ser Leu Phe Leu Arg
 210 215 220
 Ala Glu Ala Ala Leu Arg Gly Trp Ala Gly Ala Lys Gly Thr Ala Glu
 225 230 235 240
 Asp Leu Tyr Lys Glu Gly Ile Glu Ala Ser Phe Asn Tyr Tyr Gln Ile
 245 250 255
 Gly Ala Asp Glu Glu Gly Gln Glu Lys Ile Ser Lys Tyr Met Glu Gly
 260 265 270
 Leu Lys Gly Leu Gln Ala Phe Lys Ser Gly Asp Arg Glu Ala Gln Leu
 275 280 285
 Glu Gln Ile Ile Thr Gln Lys Trp Ile Ala Val Tyr Pro Asn Gly Asn
 290 295 300
 Glu Gly Trp Ala Glu Phe Arg Arg Thr Asp Tyr Pro Arg Tyr Met Lys
 305 310 315 320
 Thr Pro Lys Gly Gly Asn Asn Ser Gly Gly Glu Val Ala Asn Gly Lys
 325 330 335
 Phe Ile Lys Arg Leu Arg Tyr Pro Asp Ser Glu Val Ser Asn Pro Asn
 340 345 350
 Arg Pro Lys Asp Val Asp Thr Gln Gly Thr Arg Leu Trp Trp Asp Val
 355 360 365
 Ala Asp Thr Asn Asp Asp Gly Gly Asn Tyr Val Thr Pro Asn Asn Phe
 370 375 380
 Arg
 385

<210> 7129

<211> 303

<212> PRT

<213> B.fragilis

<400> 7129

Leu Phe Tyr Phe Cys Ile Asn Lys Glu Arg Ile Leu Met Pro Asn Arg
 1 5 10 15
 Asp Ser Glu Lys Leu Ile Thr Asp Gly Tyr Thr Thr Thr Leu Leu Gly
 20 25 30
 Asp Glu Leu Met Val Cys Glu Asn Met Lys His Ile Arg Val Thr Ser
 35 40 45
 Val Pro Ser Tyr Thr Glu Val Gly Met Ile Ile Leu Cys Leu Arg Gly
 50 55 60
 Thr Ala Lys Ile Cys Ile Phe Asp Asn Ile His Ile Leu Ala Lys Asn
 65 70 75 80
 Glu Leu Ala Val Ile Leu Pro Gly Gln Leu Val Ser Ile Thr Glu Leu
 85 90 95
 Ser Pro Asp Phe Leu Cys Asn Ile Val Val Leu Ser Arg Ala Leu Phe
 100 105 110
 Asp Asp Thr Leu Ser Gly Phe Ser Arg Phe Ser Pro Leu Phe Phe Val
 115 120 125
 Tyr Met Arg Ser His Tyr Trp Tyr Glu Leu Thr Gly Glu Glu Ile Glu
 130 135 140
 Arg Phe Lys Leu Phe Tyr Gly Ser Leu Ser Gln Arg Ala Lys Asp Pro
 145 150 155 160
 Thr His Phe Phe Arg Arg Glu Ser Val Leu Leu Leu Leu Arg Ile Phe
 165 170 175

Tyr Leu Asp Ile Tyr Asn Glu Tyr Tyr Ser Lys Ser His Leu Met Lys
 180 185 190
 Gly Gly Ser Asp Met Gly Lys Ser Lys Leu Ala His Asp Phe Phe Cys
 195 200 205
 Leu Ile Met Gln His Tyr Arg Glu His Lys Asp Val Ala Phe Tyr Ala
 210 215 220
 Asp Lys Leu Cys Ile Thr Ser Lys Tyr Leu Ser Met Val Ile Lys Glu
 225 230 235 240
 Ala Ser Gly Lys Thr Ala Lys Asp Trp Ile Val Glu Tyr Ala Ile Leu
 245 250 255
 Glu Ile Lys Ala Met Leu Lys Asn Ser Thr Met Asn Ile Gln Glu Ile
 260 265 270
 Ser Ile Lys Thr Asn Phe Ala Asn Gln Ser Ser Leu Gly Arg Phe Phe
 275 280 285
 Arg Lys His Thr Gly Met Thr Leu Thr Glu Tyr Arg Met His Arg
 290 295 300

<210> 7130

<211> 989

<212> PRT

<213> B.fragilis

<400> 7130

Thr Phe Cys Phe Glu Gly Cys Gln Thr Asn Asp Cys Tyr Tyr Ser Thr
 1 5 10 15
 Tyr Arg Gln Met Lys Lys Leu Leu Ile Trp Thr Val Leu Leu Thr
 20 25 30
 Ala Thr Leu Ser Thr Tyr Ala Gln Asn Lys Ile Val Thr Val Ser Gly
 35 40 45
 Arg Val Ile Glu Ala Gly Thr Lys Glu Pro Val Glu Leu Ala Ala Val
 50 55 60
 Gln Leu Leu Ser Leu Pro Asp Ser Ala Gln Val Ala Gly Met Thr Thr
 65 70 75 80
 Ser Thr Gln Gly Tyr Phe Ser Leu Ser Lys Gln Lys Pro Gly Lys Tyr
 85 90 95
 Leu Leu Lys Val Ser Phe Ile Gly Tyr Val Thr Lys Ile Ile Pro Val
 100 105 110
 Gln Leu Thr Ala Asn Val Pro Ala Lys Lys Met Gly Asn Ile Glu Leu
 115 120 125
 Ala Thr Asp Ala Val Met Leu Gln Glu Ala Val Val Ala Glu Ala
 130 135 140
 Pro Gln Val Thr Val Val Glu Asp Thr Leu Met Tyr Asn Ser Ser Ala
 145 150 155 160
 Tyr Arg Thr Pro Glu Gly Ala Met Leu Glu Glu Leu Val Lys Lys Leu
 165 170 175
 Pro Gly Ala Glu Ile Asp Asp Asp Gly Asn Val Lys Ile Asn Gly Lys
 180 185 190
 Asp Leu Lys Lys Ile Met Val Asp Gly Lys Glu Phe Phe Gly Gly Asp
 195 200 205
 Val Lys Thr Gly Leu Lys Asn Leu Pro Val Asp Met Val Asp Lys Leu
 210 215 220
 Lys Thr Tyr Asp Lys Lys Ser Asp Leu Ala Arg Val Thr Gly Ile Asp
 225 230 235 240
 Asp Gly Glu Glu Glu Thr Val Leu Asp Leu Thr Val Lys Lys Gly Met
 245 250 255
 Asn Gln Gly Trp Phe Gly Asn Ala Asp Leu Gly Ala Gly Thr Lys Asp
 260 265 270
 Arg Tyr Thr Gly Arg Met Met Leu Asn Arg Phe Val Asp Lys Thr Gln
 275 280 285

Phe	Ser	Ile	Ile	Gly	Ser	Ala	Asn	Asn	Val	Asn	Asp	Gln	Gly	Phe	Ser
290	295										300				
Gly	Gly	Gly	Gly	Gly	Pro	Arg	Trp	Arg	Ser	Asn	Asn	Gly	Leu	Asn	Ala
305					310					315					320
Thr	Lys	Met	Leu	Gly	Ala	Asn	Phe	Ala	Thr	Gln	Thr	Asn	Lys	Leu	Glu
				325					330					335	
Leu	Gly	Gly	Ser	Val	Arg	Tyr	Asn	Phe	Gln	Asp	Ala	Asp	Ile	Ser	Ser
			340					345					350		
Ile	Asn	Ser	Ser	Glu	Arg	Phe	Leu	Gln	Asn	Gly	Asn	Ser	Tyr	Ser	Asn
		355					360					365			
Ser	Asn	Asn	Lys	Asn	Arg	Asn	Lys	Gly	Thr	Asn	Leu	Asn	Ala	Asp	Phe
						375					380				
Arg	Met	Glu	Trp	Lys	Pro	Asp	Thr	Leu	Thr	Asn	Ile	Ile	Phe	Arg	Pro
385					390					395					400
Asn	Phe	Ser	Tyr	Gly	Arg	Thr	Asn	Asn	Ala	Ser	Arg	Ser	Glu	Ser	Gly
				405					410					415	
Thr	Phe	Asn	Glu	Asp	Pro	Phe	Asn	Leu	Ile	Val	Asn	Pro	Asn	Asp	Tyr
			420					425					430		
Leu	Asn	Phe	Asp	Asn	Leu	Ser	Asp	Asp	Pro	Leu	Lys	Asp	Ile	Arg	Val
		435					440					445			
Asn	Ala	Thr	Asn	Ser	Ala	Ser	Leu	Ser	Lys	Gly	Lys	Ser	Leu	Ser	Gly
						455					460				
Asn	Ala	Thr	Leu	Gln	Val	Asn	Arg	Lys	Leu	Asn	Asn	Arg	Gly	Arg	Asn
465					470					475					480
Leu	Thr	Phe	Arg	Gly	Val	Phe	Gly	Tyr	Gly	Asp	Asn	Asp	Ser	Asp	Gln
				485					490					495	
Tyr	Thr	Gln	Ser	Glu	Thr	Arg	Tyr	Tyr	Gln	Leu	Leu	Asn	His	Leu	Gly
			500					505					510		
Gly	Asp	Ser	Ile	Leu	Tyr	Arg	Asn	Gln	Tyr	Ile	Thr	Thr	Pro	Thr	Arg
		515					520					525			
Asn	Tyr	Asn	Tyr	Thr	Ala	Gln	Val	Thr	Tyr	Ser	Glu	Pro	Ile	Ala	Lys
						535					540				
Ala	Thr	Phe	Leu	Gln	Phe	Ser	Tyr	Gln	Phe	Gln	Tyr	Lys	Tyr	Ser	Lys
545					550					555					560
Ser	Asp	Lys	Thr	Thr	Phe	Asp	Leu	Leu	Asp	Tyr	Pro	Asp	Trp	Ala	Ile
				565					570					575	
Gly	Gly	Ala	Leu	Pro	Ser	Gly	Tyr	Glu	Ser	His	Ala	Val	Asp	Ser	Leu
			580					585					590		
Ser	Lys	Asn	Ala	Glu	Tyr	Arg	Tyr	Tyr	Asn	His	Asp	Ala	Ser	Val	Gly
		595					600					605			
Leu	Arg	Phe	Ile	Arg	Pro	Lys	Tyr	Gln	Leu	Asn	Val	Gly	Met	Ser	Phe
		610				615					620				
Gln	Pro	Gln	Asn	Ser	Thr	Leu	Ser	Tyr	Lys	Lys	Gly	Asp	Tyr	Met	Ile
625					630					635					640
Asp															

755	760	765
Asn Thr Ala Leu Lys Asn Lys Lys Tyr Thr Ile Asn Thr Phe Thr Asn		
770	775	780
Val Asn Tyr Gln Asn Asn Val Ala Phe Leu Tyr Asn Gln Asp Thr Lys		
785	790	795
Asn Asn Asp Arg Asn Thr Ser Thr Gly Leu Thr Leu Gly Glu Arg Val		800
	805	810
Thr Gly Ser Tyr Arg Asn Asp Trp Phe Glu Phe Ser Leu Asn Gly Ser		815
	820	825
Ile Asn Tyr Thr Ala Glu Arg Asn Lys Leu Arg Pro Glu Asn Asn Gln		830
	835	840
Glu Pro Tyr Thr Tyr Ser Tyr Gly Ala Ser Thr Asn Ile Thr Met Pro		845
	850	855
Trp Lys Met Thr Leu Ala Thr Asn Ile Ala Asn Gln Ser Arg Arg Gly		860
865	870	875
Tyr Arg Asp Ser Ser Met Asn Arg Asp Glu Leu Ile Trp Asn Ala Gln		880
	885	890
Leu Ala Gln Ser Leu Leu Lys Gly Ala Ala Thr Val Ser Phe Glu Val		895
	900	905
Tyr Asp Ile Leu Arg Gln Gln Ser Asn Ile Ser Arg Ser Leu Ser Ala		910
	915	920
Asp Met Arg Ser Val Ser Glu Tyr Asn Gly Ile Asn Ser Tyr Cys Met		925
930	935	940
Val His Phe Ile Tyr Arg Leu Asn Ile Phe Gly Ser Lys Ala Ala Arg		945
	950	955
Glu Lys Met Met Asn Ser Gly Arg Arg Gly Phe Gly Gly Pro Gly Arg		960
	965	970
Gly Pro Gly Gly Gly Phe Gly Gly Gly His Pro Arg Phe		975
	980	985

<210> 7131

<211> 422

<212> PRT

<213> B.fragilis

<400> 7131

Arg Leu Val Val Tyr Thr Ala Lys Lys Glu His Ser Phe Phe Tyr Leu	
1	5
Ser Ala Asn Leu Ser Phe Val Val Ser Asp Phe Val Arg Ser Leu Asp	10
	20
Lys Thr Leu Pro Asn Trp Leu Thr Phe Ala Lys Val Arg Leu Ser Ala	25
	30
	35
Ala Gln Val Gly Lys Asp Thr Asp Pro Tyr Gln Leu Tyr Asn Thr Tyr	40
	45
	50
Gly Phe Lys Phe Glu Lys Gly Glu Leu Ile Pro Ser Lys Ser Asn Val	55
65	60
	65
Lys Met Asn Asp Gln Leu Lys Pro Glu Ile Ser Ser Ser Tyr Glu Ala	70
	75
	80
	85
Gly Leu Asp Met Lys Phe Leu Asn Asn Arg Leu Gly Phe Asp Phe Thr	90
	95
	100
Tyr Tyr Tyr Ser Arg Thr Lys Asn Gln Ile Met Lys Val Pro Ala Ala	105
	110
	115
Ala Pro Trp Ser Gly Gly Lys Trp Val Asn Ala Gly Leu Ile Thr Asn	120
	125
	130
Lys Gly Phe Glu Met Met Ile Tyr Ser Thr Pro Val Gln Leu Lys Asp	135
145	140
	145
	150
Phe Ser Phe Asp Leu Asn Val Asn Leu Ala Lys Asn Val Ser Asn Val	155
	160
	165
Glu Lys Leu Ala Asp Gly Val Asp Tyr Ile Tyr Phe Asn Gly Asp Ser	170
	175

[illegible]

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	

Ser	Val	Ile	Ala	Thr	Val	Ala	Phe	Asp	Ile	Ile	Tyr	Phe	Gly	Ala	Ile
		35					40					45			
Ile	Gly	Thr	Ile	Val	Ile	Val	Ile	Leu	Asp	Asn	Arg	Asn	Pro	Val	Lys
	50					55				60					
Thr	Met	Ala	Trp	Ile	Leu	Ile	Leu	Met	Phe	Leu	Pro	Val	Val	Gly	Leu
65				70					75						80
Val	Phe	Tyr	Phe	Phe	Phe	Gly	Arg	Ser	Gln	Arg	Arg	Glu	Lys	Ile	Ile
			85					90						95	
Gly	Lys	Lys	Ser	Tyr	Asp	Arg	Leu	Leu	Lys	Lys	Pro	Met	Ala	Glu	Tyr
			100				105					110			
Leu	Ala	Gln	Asn	Cys	Cys	Glu	Thr	Pro	Lys	Glu	Tyr	Glu	Arg	Leu	Ile
		115					120					125			
Gln	Leu	Phe	Gln	Asn	Thr	Asn	Gln	Ala	Phe	Pro	Phe	Glu	Gly	Asn	Arg
	130					135				140					
Val	Asp	Ile	Tyr	Thr	Gly	Gly	Tyr	Ser	Lys	Leu	Gln	Ala	Leu	Leu	Arg
145				150						155					160
Glu	Leu	Gln	Lys	Ala	Arg	Leu	His	Ile	His	Met	Glu	Tyr	Tyr	Ile	Phe
				165				170						175	
Glu	Asp	Asp	Pro	Val	Gly	Arg	Leu	Val	Arg	Asp	Val	Leu	Ile	Glu	Lys
			180				185					190			
Ala	Arg	Glu	Gly	Val	Glu	Val	Arg	Val	Ile	Tyr	Asp	Asp	Val	Gly	Cys
		195					200				205				
Trp	His	Val	Pro	His	Arg	Phe	Phe	Glu	Glu	Met	Arg	Asp	Ala	Gly	Ile
	210					215					220				
Glu	Val	Arg	Ser	Phe	Leu	Lys	Val	Arg	Phe	Pro	Leu	Phe	Thr	Ser	Lys
225				230						235					240
Val	Asn	Tyr	Arg	Asn	His	Arg	Lys	Ile	Val	Val	Ile	Asp	Gly	Arg	Ile
				245				250						255	
Gly	Phe	Ile	Gly	Gly	Met	Asn	Leu	Ala	Glu	Arg	Tyr	Met	Arg	Gly	Phe
			260				265						270		
Ser	Trp	Gly	Ile	Trp	Arg	Asp	Thr	His	Ile	Leu	Leu	Glu	Gly	Lys	Ala
		275				280						285			
Val	His	Gly	Leu	Gln	Thr	Ala	Phe	Leu	Leu	Asp	Trp	Tyr	Phe	Val	Asp
	290					295				300					
Arg	Thr	Leu	Ile	Thr	Ala	Ser	Arg	Tyr	Phe	Pro	Lys	Ile	Glu	Ala	Tyr
305				310						315					320
Gly	Asn	Ser	Leu	Val	Gln	Ile	Val	Thr	Ser	Glu	Pro	Ile	Gly	Pro	Trp
				325					330					335	
Lys	Glu	Ile	Met	Gln	Gly	Leu	Thr	Val	Ala	Ile	Ser	Gly	Ala	Lys	Lys
			340					345					350		
Tyr	Phe	Tyr	Met	Gln	Thr	Pro	Tyr	Phe	Leu	Pro	Thr	Glu	Gln	Ile	Leu
		355					360					365			
Gly	Ala	Met	Gln	Thr	Ala	Ala	Leu	Ala	Gly	Val	Asp	Ile	Arg	Leu	Met
		370				375					380				
Leu	Pro	Glu	His	Ala	Asp	Asn</									

500

<210> 7134
 <211> 342
 <212> PRT
 <213> B.fragilis

<400> 7134

Leu Phe Leu Leu Tyr Asn Glu Lys Glu Lys Met Asn Asn Leu Ser Glu
 1 5 10 15
 Asp Ile Leu Met Arg Tyr Leu Thr Gly Glu Cys Ser Asp Glu Asp Phe
 20 25 30
 Ala Arg Val Asn Ala Trp Ile Lys Glu Ser Asp Asp Asn Ala Arg Arg
 35 40 45
 Leu Phe Arg Met Glu Glu Val Tyr His Leu Gly Arg His Asp Ser Phe
 50 55 60
 Pro Asp Gln Lys Lys Val Ala Arg Ala Glu Ala Arg Leu Tyr Lys Lys
 65 70 75 80
 Leu Ala Gln Glu Asp Ala His Ser Arg Lys Val Ile Arg Met His Gln
 85 90 95
 Trp Met Arg Tyr Ala Ala Ile Ile Val Leu Ala Leu Met Ile Gly Thr
 100 105 110
 Gly Gly Gly Tyr Leu Tyr Tyr Gln Ala Asp Pro Thr Arg Asn Met Ile
 115 120 125
 Thr Ala Ser Ser Thr Asp Gly Lys Val Lys Glu Val Met Leu Pro Asp
 130 135 140
 Gly Thr Lys Val Trp Leu Asn Gln Ser Ala Thr Leu Arg Tyr Pro Lys
 145 150 155 160
 Glu Phe Ser Glu Ser Glu Arg Asp Val Tyr Leu Asp Gly Glu Ala Tyr
 165 170 175
 Phe Glu Val Thr Lys Asn Arg Arg Cys Pro Phe Val Val Glu Ser Glu
 180 185 190
 Ala Met Arg Ile Lys Val Leu Gly Thr Thr Phe Asn Phe Lys Cys Asp
 195 200 205
 Lys Ser His Lys Leu Ala Glu Ala Thr Leu Ile Glu Gly Glu Ile Glu
 210 215 220
 Val Arg Gly Asn His Asp Glu Gly Met Ile Ile Leu Ser Pro Gly Gln
 225 230 235 240
 Lys Ala Glu Leu Asn Lys Thr Thr Arg Arg Leu Val Val Lys Gln Val
 245 250 255
 Asp Ala Lys Leu Asp Ala Val Trp His Asn Asp Leu Ile Pro Phe Glu
 260 265 270
 Gln Ala Asp Ile Phe Val Ile Thr Arg Thr Leu Glu Arg Phe Tyr Asp
 275 280 285
 Val Lys Ile Ile Leu Ser Pro Asp Ile Lys Ser Asp Lys Thr Tyr Ser
 290 295 300
 Gly Val Leu Lys Lys Lys Asp Asn Ile Glu Ser Val Leu Gln Ser Leu
 305 310 315 320
 Asp Asn Ser Ile Pro Ile Asn Tyr Lys Ile Val Gly Asp Asn Ile Phe
 325 330 335
 Ile Ser Ser Arg Asn Lys
 340

<210> 7135
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 7135

Val	Arg	Arg	Phe	Lys	Gln	Arg	Gln	Tyr	Pro	Leu	Leu	Glu	Ala	Gly	Ile
1				5					10					15	
Gly	Arg	Lys	Ala	Thr	Gln	Val	Arg	Gly	Cys	Phe	Thr	Ala	Lys	Leu	Ala
			20					25					30		
Asn	Ser	Phe	Gln	Ser	Phe	His	Arg	Ser	Ile	Gln	Ser	Leu	Tyr	Leu	Ala
		35					40					45			
Leu	Ile	Lys	Leu	Leu	Cys	Ile	Asp	Leu	Asn	Phe	Tyr	Ile	Cys	Ile	Ala
	50					55					60				
Gln	Thr	Asp	Lys	Leu	Trp	Lys	Thr	Val	Ser	Ala	Tyr				
65					70					75					

<210> 7136
 <211> 384
 <212> PRT
 <213> B.fragilis

<400> 7136

Val	Ile	Arg	Ser	Asp	Leu	Arg	Thr	Leu	Ser	Ala	Met	Ser	Thr	Asp	Glu
1				5					10					15	
Glu	Arg	Ile	Tyr	Ser	Ile	Ala	Leu	Thr	Gln	Ile	Pro	Gly	Val	Gly	His
			20					25					30		
Ile	Gly	Ala	Lys	Arg	Leu	Val	Asp	Gly	Met	Gly	Ser	Ala	Thr	Asp	Val
		35					40					45			
Phe	Arg	Tyr	Arg	Thr	Glu	Leu	Pro	Asp	Arg	Leu	Pro	Gly	Val	Asn	Arg
	50					55					60				
Ala	Val	Val	Ala	Ala	Leu	Asp	Ser	Pro	Gln	Ala	Leu	Lys	Arg	Ala	Glu
65					70					75				80	
Gln	Glu	Tyr	Glu	Phe	Ala	Arg	Asn	Asn	Arg	Ile	Ser	Cys	Phe	Thr	Leu
				85					90					95	
Ala	Asp	Glu	Asp	Tyr	Pro	Ser	Arg	Leu	Arg	Glu	Cys	Asp	Asp	Ala	Pro
			100					105					110		
Val	Val	Leu	Phe	Phe	Lys	Gly	Lys	Ala	Asn	Leu	Asn	Ala	Leu	His	Ile
		115					120					125			
Ile	Asn	Met	Val	Gly	Thr	Arg	Asn	Ala	Thr	Asp	Tyr	Gly	Lys	His	Ile
	130					135					140				
Cys	Val	Ser	Phe	Leu	Gln	Glu	Leu	Gln	Met	Leu	Cys	Pro	Asp	Val	Leu
145					150					155					160
Val	Val	Ser	Gly	Leu	Ala	Tyr	Gly	Ile	Asp	Ile	Asn	Ala	His	Arg	Ser
				165					170					175	
Ala	Leu	Ser	Val	Glu	Leu	Pro	Thr	Val	Gly	Val	Leu	Ala	His	Gly	Leu
			180					185					190		
Asp	Arg	Ile	Tyr	Pro	Ser	Leu	His	Arg	Lys	Thr	Ala	Ile	Asp	Met	Leu
		195					200					205			
Arg	Gln	Gly	Gly	Leu	Leu	Thr	Glu	Phe	Leu	Ser	Gly	Thr	Asn	Pro	Asp
	210					215					220				
Lys	His	Asn	Phe	Ile	Ser	Arg	Asn	Arg	Ile	Val	Ala	Gly	Ile	Ser	Asp
225					230					235				240	
Ala	Thr	Ile	Val	Val	Glu	Ser	Ala	Ala	Lys	Gly	Gly	Ser	Leu	Ile	Thr
				245					250					255	
Ala	Asp	Ile	Ala	Gly	Ser	Tyr	His	Arg	Asp	Cys	Phe	Ala	Phe	Pro	Gly
		260					265						270		
Arg	Val	Thr	Asp	Glu	Tyr	Ser	Lys	Gly	Cys	Asn	Gln	Leu	Ile	Gln	Asp
		275					280					285			
Asn	Lys	Ala	Val	Leu	Leu	Glu	Ser	Ala	Ser	Asp	Phe	Val	Lys	Thr	Met
	290					295					300				
Gly	Trp	Asp	Ser	Asp	Leu	Lys	Ser	Val	Lys	Pro	Glu	Thr	Val	Gln	Arg
305					310					315				320	
Asn	Leu	Phe	Pro	Asp	Leu	Ser	Ala	Glu	Glu	Leu	Arg	Ile	Val	Asp	Ile
				325					330					335	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Leu Gly Lys Leu Gly Asp Leu Gln Ile Asn Ala Leu Met Val Gln Ala
 340 345 350
 Asp Ile Pro Ile Asn Lys Ile Ser Ala Ile Leu Phe Glu Leu Glu Met
 355 360 365
 Lys Gly Val Ile Arg Val Leu Ala Gly Gly Val Tyr Gln Leu Leu Arg
 370 375 380

<210> 7137
 <211> 310
 <212> PRT
 <213> B.fragilis

<400> 7137

Gly Tyr Phe Phe Ile Pro Ser Phe Ile Val Phe Leu Asn Asn Ser Leu
 1 5 10 15
 Thr Phe Val Val Asn Ile Gln Thr Asn Thr Pro Val Tyr Met Pro Ser
 20 25 30
 Ser Val Cys Gly Asp Pro Met Met Cys Gln Asn Cys Lys Lys Ser Val
 35 40 45
 Pro Asn Ala Ile Phe His Val Tyr His Arg Arg Gly Phe His Tyr Pro
 50 55 60
 Ala Gln Lys Cys Glu Glu Asn Phe Ile Leu Phe Leu Ile Lys Gly Glu
 65 70 75 80
 Met Leu Val Asn Ser Arg Glu Tyr Ala Gly Thr Met Leu Lys Ala Gly
 85 90 95
 Glu Phe Met Leu Gln Pro Ile Ser Ser Lys Ile Glu Met Leu Ala Met
 100 105 110
 Thr Asp Val Glu Cys Ile Tyr Tyr Gln Phe Asn Gln Pro Glu Leu Phe
 115 120 125
 Cys Asp Ile Arg Tyr Asn Arg Ile Met Lys Glu Thr Asp Pro Pro Leu
 130 135 140
 Ile Pro Ser Pro Leu Pro Ile Ile Pro Glu Leu Gln His Phe Leu Glu
 145 150 155 160
 Ser Ala Arg Thr Tyr Leu Ser Glu Lys Lys Ile Cys Arg Asp Leu Leu
 165 170 175
 Ser Leu Lys Arg Lys Glu Leu Ala Phe Ile Leu Gly Tyr Phe Tyr Ser
 180 185 190
 Asp Tyr Asp Leu Ala Ser Leu Val His Pro Leu Ser Lys Tyr Thr Ser
 195 200 205
 Ser Phe Glu Cys Phe Val Tyr Gln Asn Tyr Lys Lys Val Lys Thr Val
 210 215 220
 Glu Glu Phe Ala Lys Leu Gly Gly Tyr Ser Gln Thr Thr Phe Arg Arg
 225 230 235 240
 Ile Phe Asp Asn Val Phe His Glu Pro Val Tyr Glu Trp Met Leu Ser
 245 250 255
 Arg Arg Lys Glu Glu Ile Ile Tyr Glu Leu Gln Asn Thr Glu Ala Thr
 260 265 270
 Ile Ser Glu Ile Cys Tyr Lys Phe Gly Phe Glu Ser Leu Pro His Phe
 275 280 285
 Ser Asn Phe Cys Lys Lys Ser Phe Gly Thr Ser Pro Arg Ser Ile Arg
 290 295 300
 Leu Lys Arg Ser Ser Glu
 305 310

<210> 7138
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 7138

Leu	His	Arg	Pro	His	Gln	Gly	Lys	Ser	Ile	Phe	Gly	Val	Ala	Tyr	Asn	
1				5					10					15		
Ser	Lys	Glu	Met	Ile	Met	Asn	Glu	Arg	Tyr	Asn	Lys	Val	Ala	Leu	His	
			20					25					30			
Gly	Ser	Pro	Leu	Val	Ser	Gly	Gly	Asp	Gly	Met	Gln	Pro	Ala	Gly	Tyr	
			35				40					45				
Ser	Gly	Arg	Leu	Ser	Gly	Glu	Trp	Cys	Gly	Ser	Ala	Ala	Gly	Leu	Glu	
	50					55					60					
Arg	Ser	Asp	Gly	Glu	Val	Ala	Gly	Arg	Ser	Ser	Asp	Tyr	Phe	Leu	Ser	
65					70					75					80	
Glu	Arg	Arg	Lys	Arg												
				85												

<210> 7139

<211> 322

<212> PRT

<213> B.fragilis

<400> 7139

Arg	Met	Ala	Leu	Asp	Leu	Phe	Lys	Arg	Val	Glu	Ser	Arg	Lys	Gly	Leu	
1				5					10					15		
Phe	Ala	Val	Glu	Lys	Ile	Thr	Leu	Ile	Tyr	Asn	Leu	Leu	Thr	Ser	Ile	
			20					25					30			
Leu	Ile	Leu	Phe	Met	Phe	Gln	Arg	Met	Asp	His	Pro	Leu	His	Met	Leu	
			35				40					45				
Trp	Asp	Arg	Ala	Val	Ile	Ala	Ala	Met	Thr	Phe	Leu	Leu	Met	Tyr	Leu	
	50					55					60					
Tyr	Arg	Leu	Ala	Pro	Cys	Lys	Phe	Ser	Ala	Phe	Val	Arg	Ile	Ala	Ile	
65					70					75					80	
Gln	Met	Ser	Leu	Leu	Ser	Tyr	Trp	Tyr	Pro	Asp	Thr	Phe	Glu	Phe	Asn	
				85					90					95		
Arg	Val	Phe	Pro	Asn	Leu	Asp	His	Leu	Phe	Ala	Thr	Ala	Glu	Gln	Trp	
			100					105					110			
Met	Phe	Gly	Gly	Gln	Pro	Ala	Val	Trp	Phe	Cys	His	Ala	Phe	Pro	Gln	
		115					120					125				
Met	Trp	Val	Ser	Glu	Pro	Phe	Asn	Met	Gly	Tyr	Phe	Ala	Tyr	Tyr	Pro	
	130					135					140					
Met	Ile	Leu	Val	Val	Thr	Leu	Phe	Tyr	Phe	Ile	Tyr	Arg	Phe	Asp	Leu	
145					150					155					160	
Phe	Glu	Lys	Met	Ser	Phe	Val	Leu	Val	Thr	Cys	Phe	Phe	Ile	Tyr	Tyr	
				165					170					175		
Leu	Ile	Tyr	Ile	Phe	Val	Pro	Val	Ala	Gly	Pro	Gln	Phe	Tyr	Phe	Pro	
			180					185					190			
Ala	Ile	Gly	Met	Asp	Ser	Val	Ser	Gln	Gly	Val	Phe	Pro	Ser	Ile	Gly	
		195					200					205				
Asp	Tyr	Phe	Asn	His	Asn	Gln	Glu	Leu	Leu	Pro	Gly	Pro	Gly	Tyr	Gln	
	210					215					220					
His	Gly	Phe	Phe	Tyr	Ser	Leu	Val	Glu	Gly	Ser	Gln	Gln	Val	Gly	Glu	
225					230					235					240	
Arg	Pro	Thr	Ala	Ala	Phe	Pro	Ser	Ser	His	Val	Gly	Val	Ser	Thr	Ile	
				245					250					255		
Leu	Met	Ile	Met	Ala	Trp	Arg	Ala	Ser	Lys	Lys	Leu	Phe	Ala	Cys	Leu	
			260					265					270			
Met	Pro	Phe	Tyr	Leu	Leu	Leu	Cys	Gly	Ala	Thr	Val	Tyr	Ile	Gln	Ala	
		275					280					285				
His	Tyr	Leu	Ile	Asp	Ala	Ile	Ala	Gly	Phe	Val	Ser	Ala	Phe	Val	Leu	
	290					295					300					
Tyr	Val	Leu	Val	Thr	Lys	Met	Phe	Lys	Lys	Trp	Phe	Ala	Val	Pro	Met	

305
Phe Lys

310

315

320

<210> 7140
<211> 72
<212> PRT
<213> B.fragilis

<400> 7140
Asn Pro Phe Thr Trp Glu Lys Tyr Pro Thr Asp Pro Lys Asn Glu Lys
1 5 10 15
Gly Ile Arg Met Lys Leu Cys Pro Leu Ser Gly Lys Lys Ser Gly Phe
20 25 30
Tyr Ser Val Phe Lys Ala Val Ile Phe Ser Pro Leu Ala Ala Arg Val
35 40 45
Arg Arg Ala Arg Gly Glu Ser Pro Lys Glu Ala Leu Gln Lys Cys Ala
50 55 60
Lys Cys Asp Lys Glu Ser Asn Pro
65 70

<210> 7141
<211> 341
<212> PRT
<213> B.fragilis

<400> 7141
Ile Ile Met Tyr Arg Phe Glu Leu Leu Tyr Leu Tyr Cys Thr Asn Arg
1 5 10 15
Gln Ile Met Glu Asn Arg Ile Cys Ile Leu Thr Leu Phe Val Phe Leu
20 25 30
Phe Leu Leu Ser Gly Glu Ser Arg Ala Met Val Ala Met Pro Asp Ala
35 40 45
Trp Thr Arg Met Met Ile Gly Val Asn Gln Lys Asp Trp Ser Leu Leu
50 55 60
Arg Glu Arg Val Gln Ala Asp Leu His Val Pro Asp Arg Glu Asp Val
65 70 75 80
Leu Met Leu Ile Asp Tyr His Arg Asp Asp Arg Met Lys Cys Glu Asn
85 90 95
Leu Leu Arg Arg Leu Asn Gly Gly Glu Ala Tyr Arg Tyr Ile Met Asn
100 105 110
Lys Ile Leu Pro Leu Leu Tyr Val Tyr Arg Glu His Ser Pro Val Pro
115 120 125
Ile Pro Asp Asp Lys Ala Ala Gly Val Phe Leu Ser Thr Val Asn Val
130 135 140
Leu Pro Arg Val Lys Phe Val His Pro Gln Pro Val Val Pro Glu Glu
145 150 155 160
Gly Lys Ile Glu Thr Pro Val Ile Ile Glu Gln Arg Thr Val Leu Ala
165 170 175
Leu Lys Asn Asn Leu Leu Tyr Asp Leu Ala Leu Ala Pro Asn Ile Glu
180 185 190
Val Glu Ile Pro Leu Asn Arg Arg Trp Ser Val Asn Ala Glu Tyr Lys
195 200 205
Cys Pro Trp Trp Leu Asn Ser Ser Arg Glu Phe Cys Tyr Gln Leu Leu
210 215 220
Ser Gly Gly Val Glu Gly Arg Cys Trp Leu Gly Asn Arg Lys Arg Arg
225 230 235 240
Asn Arg Leu Ala Gly His Phe Ile Gly Ala Tyr Ala Glu Gly Gly Ile
245 250 255

Tyr Asp Phe Gln Phe Lys Gly Asp Gly Tyr Gln Gly Arg Tyr Tyr Ala
 260 265 270
 Ala Ser Gly Leu Thr Tyr Gly Tyr Ala Lys Gln Ile Ala Arg His Leu
 275 280 285
 Ser Phe Glu Phe Ser Leu Gly Ile Gly Tyr Leu Thr Thr Glu Tyr Lys
 290 295 300
 Lys Tyr Thr Pro Tyr Glu Gly Asp Leu Val Trp Lys Ser Ser Ala Arg
 305 310 315 320
 Tyr Asn Phe Ile Gly Pro Thr Lys Ala Lys Val Ser Leu Val Trp Leu
 325 330 335
 Ile Thr Ala Arg Arg
 340

<210> 7142

<211> 165

<212> PRT

<213> B.fragilis

<400> 7142

Arg Leu Asn Gln Met Lys Ser Asn Lys Asn Glu Phe Leu Lys Leu Leu
 1 5 10 15
 Thr Ala Tyr Gln Gly Ile Ile His Lys Val Asn Arg Ile Tyr Phe Arg
 20 25 30
 Ser Glu Ala Asp Arg Glu Asp Asn Phe Gln Glu Thr Val Tyr Gln Leu
 35 40 45
 Trp Arg Ser Phe Pro Ala Leu Gln Asn Lys Glu Lys Pro Ala Ser Trp
 50 55 60
 Ile Tyr Thr Val Ala Ile Asn Thr Ser Ile Ser Lys Val Arg Lys Asp
 65 70 75 80
 Ser Arg Ile Glu Phe Arg Asp Ser Pro Pro Asp Gly Glu Pro Val Asp
 85 90 95
 Pro Trp Glu Gln Gln Glu Gln Asp Glu Asn Trp Gln Arg Leu Val Asn
 100 105 110
 Ala Leu Gln Lys Leu Asn Glu Ile Asp Lys Ser Ile Met Leu Leu Tyr
 115 120 125
 Met Glu Asp Tyr Ser Tyr Glu Glu Ile Ala Gly Ile Val Gly Ile Ser
 130 135 140
 Ser Ser Ala Val Gly Val Lys Ile His Arg Leu Lys Gly Gln Leu Gln
 145 150 155 160
 Lys Gln Phe Lys Lys
 165

<210> 7143

<211> 833

<212> PRT

<213> B.fragilis

<400> 7143

Leu Met Asn His Lys Val Leu Tyr Arg Val Ala Leu Phe Cys Leu Phe
 1 5 10 15
 Ser Met Leu Ser Ala Val Leu Met His Ala Gly Glu Gln Gln Gln
 20 25 30
 Ser Lys Gly Ile Val Thr Gly Arg Ile Val Asp Gln Gln Lys Gln Pro
 35 40 45
 Tyr Tyr Pro Val Ala Val Ala Ile Glu Gly Val Tyr Ile Gly Gly Tyr
 50 55 60
 Thr Asn Glu Asn Gly Val Tyr His Ile Asn Asp Val Pro Thr Gly Ser
 65 70 75 80
 Gln Thr Ile Val Val Ser Gly Ile Gly Val Lys Thr Lys Lys Val Pro

Tyr Arg Leu Pro Glu Ser Ile Glu Met Phe Gly Asp Gly Leu Ile Gln
 565 570 575
 Gln Arg Asn Pro Asp Leu Lys Pro Glu Ser Ser Arg Asn Leu Asn Leu
 580 585 590
 Gly Leu Ser Phe Ile Gln Thr Phe Gly Ala His Gln Leu Ser Ala Asp
 595 600 605
 Gly Asn Phe Ile Tyr Arg Tyr Thr Thr Asp Phe Ile Leu Lys Gly Val
 610 615 620
 Ser Leu Thr Ser Asn Pro Thr Thr Gly Tyr Glu Asn Leu Gly Lys Val
 625 630 635 640
 Leu Thr Lys Gly Val Glu Ala Ala Val Arg Tyr Asn Tyr Lys Asp Leu
 645 650 655
 Phe His Thr Gly Ala Gly Phe Thr Tyr Gln Asp Ile Thr Asp Arg Gln
 660 665 670
 Arg Tyr Glu Lys Thr Lys Asp Ser Phe Val Gly Glu Gly Ile Thr Glu
 675 680 685
 Asn Ile Thr Tyr Lys Glu Arg Leu Pro Asn Ile Pro Tyr Leu Phe Ala
 690 695 700
 Asn Ala Asp Ala Gly Val Arg Phe His Asp Leu Ile Trp Arg Asn Ser
 705 710 715 720
 Val Leu Thr Phe Asp Tyr Asn Leu Asn Tyr Ile His Ser Tyr Tyr Leu
 725 730 735
 Ser Phe Pro Gly Leu Gly Ala Lys Ser Ser Lys Lys Val Ile Pro Glu
 740 745 750
 Gln Phe Ser His Asp Leu Ala Leu Gly Tyr Ser Met Asp Asn Gly Lys
 755 760 765
 Tyr Ser Val Val Val Glu Cys Thr Asn Leu Thr Asn Gln Lys Leu Tyr
 770 775 780
 Asp Asn Tyr Arg Leu Gln Lys Pro Gly Arg Ala Phe Asn Val Lys Leu
 785 790 795 800
 Arg Tyr Phe Phe Ser Lys Val Lys Lys Ser Asp Asp Tyr Asn Val Ser
 805 810 815
 Asn Leu Tyr Val Ser Pro Cys Cys Leu Pro Phe Ile Gly Cys His Gly
 820 825 830
 Met

<210> 7144

<211> 342

<212> PRT

<213> B.fragilis

<400> 7144

Leu Lys Lys His Thr Ile Met Lys Lys Ile Leu Phe Ala Ala Val Ala
 1 5 10 15
 Ala Met Ala Ile Thr Gly Cys Ser Gln Asn Glu Glu Ile Glu Lys Ala
 20 25 30
 Val Gln Pro Val Glu Ile Ser Phe Asn Thr Ala Val Ser Lys Thr Thr
 35 40 45
 Arg Ala Thr Thr Leu Val Asn Ser Ala Phe Thr Lys Phe Thr Ala Tyr
 50 55 60
 Ala Tyr Ser Thr Thr Glu Ala Phe Ala Asn Ala Thr Lys Val Asn Ala
 65 70 75 80
 Leu Ile Ser Gly Ala Glu Phe Thr Lys Gly Glu Asn Ser Ala Trp Gly
 85 90 95
 Ser Gly Asn Ser Val Phe Tyr Trp Pro Ala Thr Asp Gln Val Ser Phe
 100 105 110
 Phe Ala Phe Ser Pro Asn Thr Lys Glu Gln Leu Ser Trp Gly Ala Ala
 115 120 125

Val Ala Glu Thr Ala Pro Thr Leu Thr Tyr Thr Val Lys Asp Ala Val
 130 135 140
 Lys Asp Gln Glu Asp Leu Val Val Ala Glu Val Met Asn Lys Gln Lys
 145 150 155 160
 Ala Thr Ser Gly Ser Thr Gly Ala Val Ala Leu Asn Phe Lys His Ala
 165 170 175
 Leu Thr Lys Val Gly Phe Lys Ile Lys Gly Glu Gly Ser Gly Val Thr
 180 185 190
 Tyr Thr Leu Asn Lys Ile Val Ile Asn Ala Lys Lys Lys Gly Val Tyr
 195 200 205
 Thr Tyr Ala Thr Ser Thr Thr Asp Glu Thr Thr Leu Gly Thr Trp Thr
 210 215 220
 Ile Pro Ser Asp Val Thr Ala Asn Thr Ala Tyr Thr Val Glu Pro Thr
 225 230 235 240
 Asn Ala Leu Ser Ile Thr Gly Ala Asp Ser Asp Ala Thr Val Asp Ala
 245 250 255
 Thr Leu Val Gly Ala Asp Tyr Thr Ala Met Leu Ile Pro Gln Asp Leu
 260 265 270
 Thr Gly Val Thr Phe Glu Ile Tyr Tyr Lys Ala Glu Ala Gly Gly Ala
 275 280 285
 Ile Leu Cys Asp Lys Thr Thr Thr Pro Glu Glu Ile Thr Phe Ala Asp
 290 295 300
 Gly Thr Trp Thr Ala Gly Gln Ser Val Ala Tyr Val Leu Thr Leu Lys
 305 310 315 320
 Gly Val Glu Lys Met Ser Ile Thr Gly Ser Val Ala Asp Ser Trp Asp
 325 330 335
 Phe Thr Glu Thr Pro Lys
 340

<210> 7145
 <211> 377
 <212> PRT
 <213> B.fragilis

<400> 7145
 Glu Met Asn Lys Thr Phe Arg Lys Ala Cys Ala Lys Leu His Leu Trp
 1 5 10 15
 Leu Gly Leu Leu Ser Gly Ile Val Val Phe Ile Val Cys Ile Thr Gly
 20 25 30
 Cys Met Tyr Ala Phe Lys Asp Glu Ile Thr Asp Ala Thr Gln Pro Trp
 35 40 45
 Arg Phe Val Ala Pro Leu Glu Lys Glu Phe Leu Pro Pro Ser Arg Leu
 50 55 60
 Leu Ala Ile Ala Asp Ser Val Met Gly Gly Ala Ser Ala Thr Ala Ile
 65 70 75 80
 Thr Tyr Gly Glu Arg Ser Asp Ala Ala Trp Val Asp Tyr Tyr Gln Pro
 85 90 95
 Glu Ala Gly Met Ser Thr Val Phe Ile Asn Pro Tyr Ser Gly Gln Val
 100 105 110
 Leu Lys Ser Val Val Asn His Asn Gly Asp Phe Asp Phe Phe Arg Leu
 115 120 125
 Val Leu Ser Gly His Arg Thr Leu Trp Leu Pro Arg Glu Ile Gly Ser
 130 135 140
 Pro Ile Val Gly Tyr Ser Val Leu Ile Phe Leu Ile Thr Leu Ile Thr
 145 150 155 160
 Gly Val Ile Leu Trp Trp Pro Arg Ser Trp Thr Arg Lys Ala Leu Val
 165 170 175
 Gln Arg Leu Thr Leu Lys Arg Pro Phe Thr Phe Ser Arg Leu Asn Phe
 180 185 190

Asp Leu His Asn Val Ala Gly Phe Tyr Ala Ala Leu Val Leu Ala Val
 195 200 205
 Leu Cys Phe Thr Gly Leu Ile Phe Ser Leu Asn Trp Phe Ser Arg Gly
 210 215 220
 Val Tyr Ser Ile Thr Ser Gly Gly Glu Glu Leu Lys Pro Tyr Val Leu
 225 230 235 240
 Pro Val Ser Asp Thr Leu Gln Val Val Asn Arg Val Thr Asn Pro Leu
 245 250 255
 Asp Arg Leu Tyr Thr Gln Leu Arg Leu Glu Glu Pro Ala Ala Lys Thr
 260 265 270
 Phe Tyr Phe Ala Leu Pro Gly Gln Ala Asp Gly Val Tyr Arg Val Ser
 275 280 285
 Val Val His Lys Arg Gly Ser Tyr Tyr Arg Thr Asp Asn Leu Phe Phe
 290 295 300
 Asp Arg Tyr Thr Leu Val Ser Leu Lys Gly Ala Gly Pro Tyr Ala Gly
 305 310 315 320
 Lys Tyr Thr Glu Ala Ser Pro Ala Asp Lys Phe Arg Arg Met Asn Leu
 325 330 335
 Glu Ile His Asp Gly Arg Ile Trp Gly Leu Pro Gly Lys Ile Ile Met
 340 345 350
 Phe Leu Ala Ser Leu Thr Gly Ala Ser Leu Pro Val Thr Gly Phe Ile
 355 360 365
 Ile Trp Tyr Arg Lys Arg Cys Lys Arg
 370 375

<210> 7146
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 7146
 His Ser Val Lys Met Ile Ile Val Phe Ala Gln Ile Gly Leu Phe Thr
 1 5 10 15
 Ala Lys Ser Met Gly Thr Lys Lys Asn Arg Phe Pro Tyr Gly Leu Ala
 20 25 30
 Ile Phe Phe Leu Leu Ser Gln Ser Lys Lys Lys Gln Pro Asn Arg Lys
 35 40 45
 Gln Lys Gln Glu Lys Gln Glu Asn Gly Arg Lys Lys Glu Tyr Met
 50 55 60
 Lys Val Phe Tyr Leu Ser Gly Ser Leu Leu His Ser Arg Ala Thr Gly
 65 70 75 80
 Gly Ala Tyr Ser Leu Ile Leu Leu Gln Asn Arg Asp Lys Glu Arg Thr
 85 90 95

<210> 7147
 <211> 142
 <212> PRT
 <213> B.fragilis

<400> 7147
 Lys Asn Leu Lys Gly Leu Asn Lys Met Glu Lys Tyr Ile Tyr Glu Leu
 1 5 10 15
 Thr Leu Lys Val Arg Asp Tyr Glu Cys Asp Leu Gln Gly Ile Val Asn
 20 25 30
 Asn Ala Asn Tyr Gln His Tyr Leu Glu His Thr Arg His Glu Phe Leu
 35 40 45
 Ser Ser Val Gly Val Ser Phe Ala Lys Leu His Glu Glu Gly Val Asp
 50 55 60
 Pro Val Val Ala Arg Ile Asn Met Ala Phe Lys Thr Pro Leu Lys Ser

65					70					75				80	
Gly	Asp	Glu	Phe	Val	Ser	Lys	Leu	Tyr	Met	Lys	Lys	Glu	Gly	Ile	Lys
				85					90					95	
Tyr	Val	Phe	Tyr	Gln	Asp	Ile	Phe	Arg	Lys	Ser	Asp	Asp	Lys	Val	Val
			100					105					110		
Val	Lys	Ser	Thr	Val	Glu	Thr	Val	Cys	Val	Val	Asn	Gly	Arg	Leu	Ser
		115					120					125			
Asn	Ser	Glu	Leu	Phe	Asp	Gln	Ile	Phe	Ala	Pro	Tyr	Leu	Gln		
	130					135					140				

<210> 7148

<211> 255

<212> PRT

<213> B.fragilis

<400> 7148

Arg	Lys	Thr	Lys	Met	Asp	Lys	Asn	Ile	Ser	Phe	Thr	Leu	Lys	Val	Trp
1				5					10					15	
Arg	Gln	Lys	Gly	Pro	Lys	Ala	Lys	Gly	Ala	Phe	Glu	Thr	Tyr	Gln	Met
			20					25					30		
Lys	Asp	Ile	Pro	Gly	Asp	Thr	Ser	Phe	Leu	Glu	Met	Leu	Asp	Ile	Leu
		35					40					45			
Asn	Glu	Gln	Ile	Ile	Asn	Asp	Gly	Gly	Glu	Pro	Ile	Val	Phe	Asp	His
		50				55					60				
Asp	Cys	Arg	Glu	Gly	Ile	Cys	Gly	Met	Cys	Ser	Leu	Tyr	Ile	Asn	Gly
65					70				75					80	
His	Pro	His	Gly	Pro	Ala	Thr	Gly	Ala	Thr	Thr	Cys	Gln	Met	Tyr	Met
				85				90						95	
Arg	Arg	Phe	Lys	Asp	Gly	Asp	Thr	Ile	Thr	Val	Glu	Pro	Trp	Arg	Ser
			100					105					110		
Ala	Gly	Phe	Pro	Val	Ile	Arg	Asp	Leu	Met	Val	Asp	Arg	Ser	Ala	Tyr
		115					120					125			
Asp	Lys	Ile	Met	Gln	Ala	Gly	Gly	Tyr	Val	Ser	Val	Asn	Thr	Gly	Ala
	130					135					140				
Pro	Gln	Asp	Ala	Asn	Ala	Ile	Leu	Ile	Ser	Lys	Asp	Ile	Ala	Asp	Glu
145				150						155				160	
Ala	Met	Asp	Ala	Ala	Ala	Cys	Ile	Gly	Cys	Gly	Ala	Cys	Val	Ala	Ala
			165					170						175	
Cys	Lys	Asn	Gly	Ser	Ala	Met	Leu	Phe	Val	Ser	Ala	Lys	Val	Ser	Gln
		180						185					190		
Leu	Asn	Leu	Leu	Pro	Gln	Gly	Lys	Val	Glu	Ala	Ala	Arg	Arg	Ala	Lys
	195						200					205			
Ala	Met	Leu	Ser	Lys	Met	Asp	Glu	Leu	Gly	Phe	Gly	Asn	Cys	Thr	Asn
	210				215						220				
Thr	Arg	Ala	Cys	Glu	Ala	Glu	Cys	Pro	Lys	Asn	Ile	Ser	Ile	Ser	Asn
225					230					235				240	
Ile	Ala	Arg	Leu	Asn	Arg	Asp	Phe	Ile	Ile	Ala	Lys	Leu	Lys	Asp	
			245					250						255	

<210> 7149

<211> 211

<212> PRT

<213> B.fragilis

<400> 7149

Thr	Ser	Arg	Lys	Met	Lys	Lys	Phe	Val	Leu	Ile	Cys	Phe	Cys	Val	Leu
1				5					10					15	
Ser	Ser	Val	Gly	Gly	Tyr	Ala	Gln	Asn	Trp	Asp	Ile	Asn	Thr	Leu	His
			20					25					30		

Lys Ile Asn Ser Leu Asp Ser Lys Phe Ala Arg Asn Tyr Ser Lys Ala
 35 40 45
 Phe Ser Lys Ser Ala Pro Tyr Ile Ala Val Gly Val Pro Val Ala Met
 50 55 60
 Ala Val Tyr Ala Gly Ile Asp Lys Asp Lys Glu Leu Leu Lys Asp Ala
 65 70 75 80
 Ile Tyr Ile Gly Thr Ser Val Ala Glu Ala Val Val Ile Thr Tyr Gly
 85 90 95
 Met Lys Tyr Ala Phe Asp Arg Glu Arg Pro Tyr Asp Arg Tyr Pro Asp
 100 105 110
 Arg Val Asp Ala Arg Ser His Glu Ser Ser Pro Ser Phe Pro Ser Gly
 115 120 125
 His Thr Ala Ala Ala Phe Ser Leu Ala Thr Ser Leu Ser Ile Arg Tyr
 130 135 140
 Pro Lys Trp Tyr Val Ile Ala Pro Ser Ala Phe Trp Ala Cys Ser Val
 145 150 155 160
 Gly Phe Ser Arg Met Asn Glu Gly Val His Tyr Pro Ser Asp Val Ala
 165 170 175
 Ala Gly Ala Val Ile Gly Ala Gly Cys Ala Val Ala Asn Ile Tyr Val
 180 185 190
 Asn Arg Trp Leu Asn Lys Trp Leu Phe Gly Glu Lys Lys Lys Val Thr
 195 200 205
 Ile Ser Tyr
 210

<210> 7150

<211> 342

<212> PRT

<213> B.fragilis

<400> 7150

Leu Ser Phe Asp Gln Asn Phe Met Glu Ser Ile Leu Ile Thr Gly Ala
 1 5 10 15
 Ser Gly Phe Ile Gly Ser Phe Ile Val Gln Glu Ala Leu Lys Arg Arg
 20 25 30
 Phe Gly Val Trp Ala Gly Ile Arg Ala Ser Ser Ser Lys Lys Tyr Leu
 35 40 45
 Lys Glu Arg Lys Ile His Phe Leu Glu Leu Asp Phe Ala His Pro Asn
 50 55 60
 Glu Leu Arg Ala Gln Leu Ser Gly His Lys Gly Thr Tyr Asn Lys Phe
 65 70 75 80
 Asp Tyr Ile Val His Cys Ala Gly Val Thr Lys Cys Ala Asp Lys Ser
 85 90 95
 Asp Phe Asp Arg Val Asn Tyr Leu Gln Thr Lys Tyr Phe Val Asp Thr
 100 105 110
 Leu Arg Glu Leu Asn Met Ile Pro Lys Gln Phe Ile Tyr Ile Ser Thr
 115 120 125
 Leu Ser Val Phe Gly Pro Ile Arg Glu Lys Asp Tyr Ser Pro Ile Ser
 130 135 140
 Glu Glu Asp Thr Pro Ala Pro Asn Thr Ala Tyr Gly Leu Ser Lys Leu
 145 150 155 160
 Lys Ala Glu Leu Tyr Ile Gln Ser Ile Pro Gly Phe Pro Tyr Val Ile
 165 170 175
 Tyr Arg Pro Thr Gly Val Tyr Gly Pro Arg Glu Ala Asp Tyr Phe Leu
 180 185 190
 Met Ala Lys Ser Ile Arg Gln His Thr Asp Phe Ser Val Gly Tyr Lys
 195 200 205
 Arg Gln Asp Leu Thr Phe Val Tyr Val Lys Asp Ile Val Gln Ala Ile
 210 215 220

Phe Leu Gly Ile Glu Lys Glu Val Ser Arg Arg Ala Tyr Phe Leu Ser
 225 230 235 240
 Asp Gly Lys Val Tyr Lys Ser Arg Ala Phe Ser Asp Leu Ile Gln Lys
 245 250 255
 Glu Leu Gly Asp Pro Phe Val Ile His Ile Lys Cys Pro Leu Ile Val
 260 265 270
 Leu Lys Val Val Ser Leu Leu Ala Glu Phe Ile Ala Thr Arg Ser Gly
 275 280 285
 Lys Ser Ser Thr Leu Asn Ser Asp Lys Tyr Lys Ile Met Lys Gln Arg
 290 295 300
 Asn Trp Gln Cys Asp Ile Thr Pro Ala Val Lys Glu Leu Gly Tyr Ala
 305 310 315 320
 Pro Glu Tyr Asp Leu Glu Lys Gly Val Lys Glu Thr Ile Ala Trp Tyr
 325 330 335
 Lys Asn Glu Gly Trp Leu
 340

<210> 7151
 <211> 164
 <212> PRT
 <213> B.fragilis

<400> 7151

Phe Tyr Gln Glu Asn Ile Val Met Lys Thr Val Ile Ile Glu Asn Lys
 1 5 10 15
 Glu Gln Val Glu Glu Ile Ile Ser Arg Cys Asp Ile Cys Phe Val Gly
 20 25 30
 Ile Thr Asp Leu Glu Gly Asn Pro Tyr Val Ile Pro Met Asn Phe Gly
 35 40 45
 Tyr Gln Asp Gly Val Ile Tyr Leu His Ser Gly Pro Thr Gly Ser Ser
 50 55 60
 Ile Asp Met Leu Ala Arg Asn Asn Arg Val Cys Ile Thr Phe Ser Val
 65 70 75 80
 Asp His Glu Leu Val Phe Gln His Pro Lys Val Ala Cys Ser Tyr Arg
 85 90 95
 Met Arg Ala Lys Ser Val Ile Cys Arg Gly Arg Val Asn Phe Ile Glu
 100 105 110
 Asp Pro Glu Glu Lys Arg Glu Ala Leu Asn Ile Leu Met Arg His Tyr
 115 120 125
 Ser Ser Arg Glu Phe Val Tyr Ser Asp Pro Ala Val Lys Asn Val Lys
 130 135 140
 Ile Trp Glu Ile Pro Ile Asp Ser Val Thr Ala Lys Glu Tyr Ala Val
 145 150 155 160
 Pro His Thr Lys

<210> 7152
 <211> 330
 <212> PRT
 <213> B.fragilis

<400> 7152

Ile Glu Asn Arg Lys Lys Met Lys Ile Gly His Ile Asp Leu Gly Glu
 1 5 10 15
 Arg Pro Val Phe Leu Ala Pro Met Glu Asp Val Thr Asp Pro Ala Phe
 20 25 30
 Arg Leu Met Cys Lys Lys Phe Gly Ala Asp Met Val Tyr Thr Glu Phe
 35 40 45
 Val Ser Ser Asp Ala Leu Ile Arg Ser Val Asn Lys Thr Thr Gln Lys

50		55		60
Leu Thr Ile Cys Asp Glu	Glu Arg Pro Val Ala	Ile Gln Ile Tyr Gly		
65	70	75	80	
Lys Asp Thr Glu Ala Met	Val Gly Ala Ala Arg	Ile Val Glu Glu Ala		
	85	90	95	
Gln Pro Asp Ile Leu Asp	Ile Asn Phe Gly Cys	Pro Val Lys Lys Val		
	100	105	110	
Ala Gly Lys Gly Ala Gly	Ala Gly Met Leu Gln	Asn Ile Pro Lys Met		
	115	120	125	
Leu Glu Ile Thr Arg Ala	Val Val Asp Ala Val	Lys Ile Pro Val Thr		
	130	135	140	
Val Lys Thr Arg Leu Gly	Trp Asp Ala Asp His	Lys Ile Ile Val Asp		
145	150	155	160	
Leu Ala Glu Gln Leu Gln	Asp Cys Gly Ile Ala	Ala Leu Ala Ile His		
	165	170	175	
Gly Arg Thr Arg Ala Gln	Met Tyr Thr Gly Glu	Ala Asp Trp Thr Leu		
	180	185	190	
Ile Gly Glu Val Lys Asn	Asn Pro Arg Met His	Ile Pro Ile Ile Gly		
	195	200	205	
Asn Gly Asp Val Thr Thr	Ala Ala Gly Ala Lys	Glu Cys Phe Glu Arg		
	210	215	220	
Tyr Gly Val Asp Ala Ile	Met Ile Gly Arg Gly	Ser Ile Gly Arg Pro		
225	230	235	240	
Trp Ile Phe Arg Glu Val	Lys His Tyr Leu Glu	Thr Gly Glu Glu Leu		
	245	250	255	
Pro Arg Glu Ser Phe Glu	Trp Tyr Leu Asp Val	Leu Arg Glu Glu Val		
	260	265	270	
Leu Asn Ser Val Ala Arg	Leu Asp Glu Arg Arg	Gly Ile Ile His Ile		
	275	280	285	
Arg Arg His Leu Ala Ala	Thr Pro Leu Phe Lys	Gly Ile Pro Asn Phe		
	290	295	300	
Arg Glu Thr Arg Ile Ala	Met Leu Arg Thr Glu	Ser Val Glu Glu Leu		
305	310	315	320	
Phe Arg Ile Phe Asp Gly	Leu Thr Thr Glu			
	325	330		

<210> 7153

<211> 652

<212> PRT

<213> B.fragilis

<400> 7153

Ile Val Asn Ser Ile Met	Thr Lys Ile Asp Ser	Lys Ile Pro Glu Gly
1	5	10
Gln Leu Ala Glu Lys Trp	Ser Asn Tyr Lys Ala	His Gln Lys Leu Val
	20	25
Asn Pro Ala Asn Lys Arg	Arg Leu Asp Ile Ile	Val Val Gly Thr Gly
	35	40
Leu Ala Gly Ala Ser Ala	Ala Ala Ser Leu Gly	Glu Met Gly Phe Arg
	50	55
Val Phe Asn Phe Cys Ile	Gln Asp Ser Pro Arg	Arg Ala His Ser Ile
65	70	75
Ala Ala Gln Gly Gly Ile	Asn Ala Ala Lys Asn	Tyr Gln Asn Asp Gly
	85	90
Asp Ser Val Tyr Arg Leu	Phe Tyr Asp Thr Ile	Lys Gly Gly Asp Tyr
	100	105
Arg Ala Arg Glu Ala Asn	Val Tyr Arg Leu Ala	Glu Val Ser Asn Ala
	115	120
Ile Ile Asp Gln Cys Val	Ala Gln Gly Val Pro	Phe Ala Arg Asp Tyr

130		135		140
Gly Gly Thr Leu Asp Asn Arg Ser Phe Gly Gly Ala Gln Val Ser Arg				
145		150		155
Thr Phe Tyr Ala Arg Gly Gln Thr Gly Gln Gln Leu Leu Leu Gly Ala				160
		165		170
Tyr Ser Ala Leu Ser Arg Gln Val Gln Lys Gly Thr Val Lys Leu Tyr				175
		180		185
Thr Arg Tyr Glu Met Leu Asp Leu Val Val Ile Glu Gly Arg Ala Arg				190
		195		200
Gly Ile Ile Ala Arg Asn Leu Val Thr Gly Glu Ile Glu Arg Phe Ala				205
		210		215
Ala His Ala Val Val Ile Gly Thr Gly Gly Tyr Gly Asn Ala Phe Phe				220
225		230		235
Leu Ser Thr Asn Ala Met Gly Ser Asn Gly Ser Val Ala Ile Gln Cys				240
		245		250
Tyr Lys Lys Gly Ala Tyr Phe Ala Asn Pro Cys Phe Ala Gln Ile His				255
		260		265
Pro Thr Cys Ile Pro Val His Gly Asp Lys Gln Ser Lys Leu Thr Leu				270
		275		280
Met Ser Glu Ser Leu Arg Asn Asp Gly Arg Ile Trp Val Pro Lys Lys				285
		290		295
Ile Glu Asp Ala Lys Ala Leu Gln Ala Gly Thr Lys Lys Pro Thr Glu				300
305		310		315
Ile Pro Asp Glu Asp Arg Asp Phe Tyr Leu Glu Arg Arg Tyr Pro Ala				320
		325		330
Phe Gly Asn Leu Val Pro Arg Asp Val Ala Ser Arg Ala Ala Lys Glu				335
		340		345
Arg Cys Asp Ala Gly Phe Gly Val Asn Asn Thr Gly Leu Ala Val Phe				350
		355		360
Leu Asp Phe Lys Tyr Ala Ile Asp Arg Leu Gly Glu Asp Val Val Arg				365
		370		375
Ala Arg Tyr Gly Asn Leu Phe Asp Met Tyr Glu Glu Ile Thr Asp Glu				380
385		390		395
Asn Pro Tyr Lys Thr Pro Met Met Ile Phe Pro Ala Ile His Tyr Thr				400
		405		410
Met Gly Gly Ile Trp Val Asp Tyr Glu Leu Met Thr Ser Ile Pro Gly				415
		420		425
Leu Phe Ala Ile Gly Glu Ala Asn Phe Ser Asp His Gly Ala Asn Arg				430
		435		440
Leu Gly Ala Ser Ala Leu Met Gln Gly Leu Ala Asp Gly Tyr Phe Val				445
		450		455
Leu Pro Tyr Thr Ile Gln Asn Tyr Leu Ala Asp Gln Ile Gln Val Pro				460
465		470		475
Arg Phe Ser Thr Asp Leu Pro Glu Phe Ala Ala Ala Glu Lys Glu Val				480
		485		490
Lys Asp Lys Ile Gln Lys Ile Lys Ala Val Asn Gly Lys His Ser Val				495
		500		505
Asp Ser Ile His Lys Lys Leu Gly His Ile Met Trp Asp Phe Val Gly				510
		515		520
Met Ala Arg Thr Lys Glu Ser Leu Gln Lys Ala Leu Thr Gly Ile Glu				525
		530		535
Glu Val Lys Lys Asp Phe Trp Thr Asn Val Arg Ile Pro Gly Asp Val				540
545		550		555
Asn Glu Leu Asn Val Glu Leu Glu Lys Ala Leu Arg Leu Ile Asp Phe				560
		565		570
Ile Glu Val Gly Met Leu Met Ala Arg Asp Gly Leu Asn Arg Glu Glu				575
		580		585
Ser Cys Gly Gly His Phe Arg Thr Glu Tyr Gln Thr Pro Glu Gly Glu				590
		595		600
				605

Ala Leu Arg Asp Asp Lys Asn Phe Ser Tyr Val Ala Cys Trp Lys Tyr
 610 615 620
 Thr Gly Glu Asn Ser Glu Pro Glu Leu Ile Lys Glu Asp Leu Asn Tyr
 625 630 635 640
 Gln Phe Val Lys Val Gln Thr Arg Asn Tyr Lys Ser
 645 650

<210> 7154
 <211> 292
 <212> PRT
 <213> B.fragilis

<400> 7154
 Phe Met Ala Arg Glu Thr Gln Cys Asn Arg Gln Thr Asp Cys Ala Gln
 1 5 10 15
 Cys Pro Lys Ala Thr Glu Gly Ile Leu Val His Arg Lys Phe Pro Lys
 20 25 30
 Gly Gln His Phe Pro Pro Asp Lys Cys Thr Gln Asn Cys Ile Leu Phe
 35 40 45
 Ile Leu Gln Gly Glu Leu Leu Val Asn Ser Glu Glu Tyr Pro Gly Thr
 50 55 60
 Thr Leu Arg Glu Gly Gln Phe Ile Leu Gln Ser Ile Gly Ser Lys Leu
 65 70 75 80
 Glu Leu Leu Ala Leu Thr Asp Val Asn Tyr Val Val Tyr Trp Phe Asn
 85 90 95
 Glu Pro Pro Leu Ile Cys Glu Gln Arg Tyr His Glu Ile Leu Gln Gln
 100 105 110
 Ser Glu Ala Pro Leu Thr Tyr Thr Pro Leu Val Met Thr Gln Arg Ile
 115 120 125
 Thr Asn Phe Met Lys Asp Ile Cys Asp Tyr Leu Asp Glu Gln Met Pro
 130 135 140
 Cys Gly Ala Phe Ile Asp Leu Lys Cys Gln Glu Leu Met Tyr Leu Ile
 145 150 155 160
 Ile Cys Tyr Tyr Pro Thr Pro Gln Leu Ser Lys Phe Phe Tyr Pro Ile
 165 170 175
 Ser Ser Tyr Thr Glu Ser Phe Gln Tyr Phe Val Met Gln Asn Tyr Glu
 180 185 190
 Lys Val Lys Asn Val Glu Glu Phe Ala His Leu Gly Gly Tyr Thr Thr
 195 200 205
 Thr Thr Phe Arg Arg Leu Phe Lys Asn Met Tyr Gly Val Pro Val Tyr
 210 215 220
 Glu Trp Ile Leu Ser Lys Lys Arg Glu Gly Ile Leu Glu Asp Leu Gln
 225 230 235 240
 His Thr Lys Gln Arg Ile Thr Glu Ile Ser Asn Arg Tyr Gly Phe Asp
 245 250 255
 Ser Leu Ser His Phe Ala His Phe Cys Lys Ala Ser Phe Gly Asp Ser
 260 265 270
 Pro Arg Ala Leu Arg Thr Arg Ala Ala Arg Gly Glu Lys Ile Thr Ala
 275 280 285
 Leu Lys Thr Glu
 290

<210> 7155
 <211> 300
 <212> PRT
 <213> B.fragilis

<400> 7155
 Gln Met Glu Ser Glu Lys Ser Ser Arg Glu Lys Gly Ile Tyr Lys Val

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1           5           10           15
Thr Ile Val Gly Ser Ile Val Asn Phe Leu Leu Leu Val Phe Lys Phe
20           25           30
Phe Ala Gly Ile Ala Gly His Ser Ala Ala Met Leu Ala Asp Ala Val
35           40           45
His Ser Leu Ser Asp Phe Ile Thr Asp Ile Val Val Ile Val Phe Val
50           55           60
Arg Ile Ala Gly Lys Pro Glu Asp Lys Gly His Asp Tyr Gly His Gly
65           70           75           80
Lys Tyr Glu Thr Leu Ala Thr Ala Ile Ile Gly Leu Leu Leu Leu Cys
85           90           95
Val Gly Phe Gly Ile Phe Trp Asn Gly Ala Ser Ser Ile Tyr Thr Phe
100          105          110
Leu Arg Gly Gly Gln Leu Glu Ser Pro Gly Val Val Ala Leu Val Ala
115          120          125
Ala Leu Val Ser Ile Val Ser Lys Glu Ile Leu Tyr Gln Tyr Thr Val
130          135          140
Ile Gln Gly Lys Lys Leu Asn Ser Gln Ala Val Ile Ala Asn Ala Trp
145          150          155          160
His His Arg Ser Asp Ala Leu Ser Ser Ile Gly Thr Ala Ile Gly Ile
165          170          175
Gly Gly Ala Ile Leu Leu Gly Asp His Trp Arg Val Leu Asp Pro Val
180          185          190
Ala Ala Val Val Val Ser Phe Phe Ile Met Lys Val Ser Val Arg Leu
195          200          205
Leu Ile Pro Cys Val Asp Glu Leu Leu Glu Lys Ser Leu Pro Glu Asp
210          215          220
Val Glu Lys Glu Ile Glu Gln Thr Val Leu Ser Phe Pro Gly Val Ser
225          230          235          240
Gln Pro His His Leu Arg Thr Arg Arg Ile Gly Asn Tyr Tyr Ala Ile
245          250          255
Glu Leu His Val Arg Met Asp Gly Lys Ile Thr Leu Glu Glu Ala His
260          265          270
Ser Thr Ala Thr Ala Ile Glu Asn Lys Leu Lys Glu Met Phe Gly Lys
275          280          285
Gly Thr His Val Gly Ile His Val Glu Pro Thr Lys
290          295          300

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<210> 7156

<211> 74

<212> PRT

<213> B.fragilis

<400> 7156

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Pro Tyr Leu Ser Arg Ala Ile Lys Cys Ile Ile Tyr Tyr Asn Ile Met
1           5           10           15
Asp Ser Pro Ile Phe Glu Asn Arg Ile Gln Val Leu Tyr Leu Asn Pro
20           25           30
Glu Val Phe Tyr Leu His Lys Met Met Asp Ser Ile Glu Tyr Tyr Leu
35           40           45
Gly Val Ser Val Lys Ser Gln Leu Ser Ala Thr Glu Pro Val Ile Asp
50           55           60
Ile Phe Ser Thr Pro Phe Asn Val Asn Thr
65           70

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<210> 7157

<211> 317

<212> PRT

<213> B.fragilis

<400> 7157

Thr Asp Met Gly Lys Ile Ala Lys Lys Leu Thr Asp Leu Val Gly Asn
 1 5 10 15
 Thr Pro Leu Leu Glu Leu Ser Asn Tyr Asn Ala Ser Asn Gly Leu Lys
 20 25 30
 Ala Arg Val Val Ala Lys Leu Glu Tyr Phe Asn Pro Ala Gly Ser Val
 35 40 45
 Lys Asp Arg Ile Ser Leu Ala Met Val Glu Asp Ala Glu Ala Lys Gly
 50 55 60
 Thr Leu Lys Ser Gly Ala Thr Ile Ile Glu Pro Thr Ser Gly Asn Thr
 65 70 75 80
 Gly Val Gly Leu Ala Phe Val Ala Ala Ala Lys Gly Tyr Lys Leu Ile
 85 90 95
 Leu Thr Met Pro Asp Thr Met Ser Met Glu Arg Arg Asn Leu Leu Lys
 100 105 110
 Ala Leu Gly Ala Glu Leu Val Leu Thr Pro Gly Ala Asn Gly Met Lys
 115 120 125
 Gly Ala Ile Ala Lys Ala Glu Glu Leu Arg Ala Ala Thr Pro Gly Ser
 130 135 140
 Val Ile Leu Gln Gln Phe Glu Asn Pro Ala Asn Pro Ala Val His Val
 145 150 155 160
 Arg Thr Thr Gly Gln Glu Ile Trp Arg Asp Thr Asp Gly Lys Val Asp
 165 170 175
 Ile Phe Val Ala Gly Val Gly Thr Gly Gly Thr Val Ser Gly Val Gly
 180 185 190
 Ala Ala Leu Lys Glu His Asn Pro Ala Val Arg Ile Val Ala Val Glu
 195 200 205
 Pro Val Asp Ser Pro Val Leu Ser Gly Gly Val Pro Gly Pro His Lys
 210 215 220
 Ile Gln Gly Ile Gly Ala Gly Phe Ile Pro Lys Thr Tyr His Ala Ala
 225 230 235 240
 Val Val Asp Glu Ile Arg Gln Val Gly Asn Asp Asp Ala Ile Arg Thr
 245 250 255
 Ser Arg Glu Leu Ala Ala Lys Glu Gly Leu Leu Val Gly Ile Ser Ser
 260 265 270
 Gly Ala Ala Val Tyr Ala Ala Thr Glu Leu Ala Lys Leu Pro Glu Asn
 275 280 285
 Glu Gly Lys Leu Ile Val Val Leu Leu Pro Asp Thr Gly Glu Arg Tyr
 290 295 300
 Leu Ser Thr Ile Leu Tyr Ala Phe Glu Glu Tyr Pro Leu
 305 310 315

<210> 7158

<211> 425

<212> PRT

<213> B.fragilis

<400> 7158

Phe Val Thr Met Tyr Lys Ile Asn Asp Phe Glu Ile Met Ala Pro Val
 1 5 10 15
 Gly Ser Arg Glu Ser Leu Ala Ala Ala Ile Gln Ala Gly Ala Asp Ser
 20 25 30
 Ile Tyr Phe Gly Ile Glu Asn Leu Asn Met Arg Ala Arg Ser Ala Asn
 35 40 45
 Thr Phe Thr Ile Glu Asp Leu Arg Glu Ile Ala Arg Thr Cys Asp Glu
 50 55 60
 His Gly Met Lys Ser Tyr Leu Thr Val Asn Thr Ile Ile Tyr Asp Lys
 65 70 75 80

Asp Ile Glu Leu Met Arg Thr Ile Val Asp Ala Ala Lys Glu Ala Gly
 85 90 95
 Ile Ser Ala Val Ile Ala Ala Asp Val Ala Val Met Ser Tyr Ala Asn
 100 105 110
 Lys Ile Gly Gln Glu Val His Leu Ser Thr Gln Leu Asn Ile Ser Asn
 115 120 125
 Ala Glu Ala Leu Lys Phe Tyr Ala Gln Phe Ala Asp Val Val Val Leu
 130 135 140
 Ala Arg Glu Leu Asn Leu Glu Gln Val Ala Glu Ile Tyr Arg Gln Ile
 145 150 155 160
 Gln Glu Glu His Ile Cys Gly Pro Ser Gly Glu Leu Ile Arg Ile Glu
 165 170 175
 Met Phe Cys His Gly Ala Leu Cys Met Ala Val Ser Gly Lys Cys Tyr
 180 185 190
 Leu Ser Leu His Glu Met Asn His Ser Ala Asn Arg Gly Ala Cys Met
 195 200 205
 Gln Ile Cys Arg Arg Ala Tyr Thr Val Arg Asp Lys Asp Thr Asp Val
 210 215 220
 Glu Leu Glu Val Asp Asn Gln Tyr Ile Met Ser Pro Lys Asp Leu Lys
 225 230 235 240
 Thr Ile His Phe Met Asn Lys Met Ile Asp Ala Gly Val Arg Val Phe
 245 250 255
 Lys Ile Glu Gly Arg Ala Arg Gly Pro Glu Tyr Val Arg Thr Val Val
 260 265 270
 Glu Cys Tyr Lys Gln Ala Ile Arg Ala Tyr Leu Asp Asp Ser Phe Thr
 275 280 285
 Asp Glu Lys Ile Ala Ala Trp Asp Glu Arg Leu Lys Thr Val Phe Asn
 290 295 300
 Arg Gly Phe Trp Asp Gly Tyr Tyr Leu Gly Gln Arg Leu Gly Glu Trp
 305 310 315 320
 Thr Lys Asn Tyr Gly Ser Ala Ala Thr Glu Arg Lys Ile Tyr Val Gly
 325 330 335
 Lys Gly Ile Lys Tyr Phe Ser Asn Ile Gly Val Ala Glu Phe Leu Val
 340 345 350
 Glu Ala Ala Glu Val Ser Val Gly Asp Lys Leu Leu Ile Thr Gly Pro
 355 360 365
 Thr Thr Gly Ala Val Phe Ala Thr Leu Asp Glu Ala Arg Val Glu Leu
 370 375 380
 Asn Pro Val Glu Thr Val Lys Lys Gly Glu His Phe Ser Met Lys Leu
 385 390 395 400
 Asp Lys Ile Arg Pro Ser Asp Lys Leu Tyr Lys Leu Val Ser Thr Glu
 405 410 415
 Glu Leu Lys Lys Phe Lys Gly Leu Glu
 420 425

<210> 7159

<211> 321

<212> PRT

<213> B.fragilis

<400> 7159

Met Lys Asp Ile Thr Arg Leu Leu Cys Met Val Leu Leu Ser Phe Leu
 1 5 10 15
 Val Val Thr Gly Cys Ser Arg Arg Asp Ile Leu Asp Asp Tyr Pro Val
 20 25 30
 Ser Gly Val Glu Val Arg Leu Asp Trp Ser Gly Val Thr Glu Lys Leu
 35 40 45
 Pro Glu Gly Val Arg Ile Ile Phe Tyr Pro Lys Asp Glu Lys Gly Arg
 50 55 60

Lys Ile Asp Thr Tyr Leu Ser Val Thr Gly Gly Glu Val Lys Val Pro
 65 70 75 80
 Ser Gly His Tyr Ala Val Val Ile Tyr Asn Tyr Asp Thr Glu Thr Val
 85 90 95
 Leu Ile Arg Gly Glu Glu Ser Tyr Glu Thr Ile Gln Ala Tyr Thr Asn
 100 105 110
 Phe Cys Lys Leu Gly Ile Ala Gly Thr Glu Lys Met Val Trp Gly Pro
 115 120 125
 Asp Pro Leu Tyr Val Val Asn Ile Asp Asp Leu Asp Ile Gln Asn Ser
 130 135 140
 Glu Glu Thr Leu Ile Leu Lys Leu Lys Pro Lys Leu Val Ile Arg Thr
 145 150 155 160
 Tyr Ser Phe Ser Ile Lys Val Gln Gly Leu Ser Asn Val Ser Asn Val
 165 170 175
 Ile Gly Ser Ile Gly Gly Met Ala Asp His Tyr Phe Leu Gly Lys Ala
 180 185 190
 Tyr Ala Met Cys Asp Asp Tyr Pro Ile Asn Ile Asp Leu Asn Val Lys
 195 200 205
 Ala Gly Lys Ile Glu Gly Val Phe Thr Thr Phe Gly Leu Pro Glu Ala
 210 215 220
 Ile Ile Thr Arg Leu Glu Ile Lys Leu Pro Val Met Met Asn Leu Met
 225 230 235 240
 Ile Ile Lys Val Asp Asn Ser Val Gln Glu Val Lys Ile Asn Ile Thr
 245 250 255
 Glu Ala Val Gln Glu Pro Thr Gly Gly Glu Gly Glu Glu Glu
 260 265 270
 Glu Thr Lys Pro Pro Ala Leu Val Glu Val Glu Ile Glu Asp Glu Ile
 275 280 285
 Lys Val Asp Asp Val Glu Thr Pro Pro Ser Gly Gly Gly Gly Ile Gly
 290 295 300
 Gly Asp Val Gly Asp Trp Asp Asp Glu Thr Asn Val Glu Leu Pro Val
 305 310 315 320
 Gly

<210> 7160
 <211> 718
 <212> PRT
 <213> B.fragilis

<400> 7160
 Asn Glu Pro Ile Met Ala Lys Lys Lys Glu Lys Lys Ala Gly Lys Arg
 1 5 10 15
 Met Lys Lys Lys Glu Leu Ser Lys Ala Val Leu Asp Phe Phe His Ala
 20 25 30
 Lys Gln Asp Glu Val Ile Ser Leu Lys Tyr Ile Phe Ser Glu Leu Lys
 35 40 45
 Leu Thr Thr His Pro Leu Lys Met Leu Cys Met Asp Ile Leu Ser Asp
 50 55 60
 Leu Leu Ala Asp Asp Tyr Ile Thr Glu Val Asp Lys Asn Lys Tyr Lys
 65 70 75 80
 Leu Asn Asn His Gly Ile Glu Met Thr Gly Thr Phe Gln Arg Lys Ser
 85 90 95
 Asn Gly Lys Asn Ser Phe Ile Pro Glu Gly Gly Gly Asp Pro Ile Phe
 100 105 110
 Val Ala Glu Arg Asn Ser Ala His Ala Met Asn Asn Asp Lys Val Arg
 115 120 125
 Ile Ala Phe Tyr Ala Lys Arg Arg Gly Cys Glu Ala Glu Gly Glu Val
 130 135 140

Ile Glu Ile Leu Gln Arg Ala Asn Asp Thr Phe Val Gly Thr Leu Glu
 145 150 155 160
 Val Glu Lys Ser Tyr Ala Phe Leu Val Thr Glu Asn Arg Thr Leu Ala
 165 170 175
 Asn Asp Ile Phe Ile Pro Lys Asp Lys Leu Lys Gly Gly Lys Thr Gly
 180 185 190
 Asp Lys Ala Val Val Lys Val Thr Glu Trp Pro Asp Lys Ala Lys Asn
 195 200 205
 Pro Ile Gly Gln Val Leu Asp Ile Leu Gly Lys Ala Gly Asp Asn Thr
 210 215 220
 Thr Glu Met His Ala Ile Leu Ala Glu Phe Gly Leu Pro Tyr Val Tyr
 225 230 235 240
 Pro Gln Ser Val Glu Lys Ala Ala Asp Lys Ile Pro Ala Glu Ile Ser
 245 250 255
 Ala Glu Glu Ile Ala Arg Arg Glu Asp Phe Arg Lys Val Thr Thr Phe
 260 265 270
 Thr Ile Asp Pro Lys Asp Ala Lys Asp Phe Asp Asp Ala Leu Ser Ile
 275 280 285
 Arg Pro Leu Lys Asp Gly Leu Trp Glu Val Gly Val His Ile Ala Asp
 290 295 300
 Val Thr His Tyr Val Lys Glu Gly Ser Ile Ile Asp Lys Glu Ala Glu
 305 310 315 320
 Lys Arg Ala Thr Ser Val Tyr Leu Val Asp Arg Thr Ile Pro Met Leu
 325 330 335
 Pro Glu Arg Leu Cys Asn Phe Ile Cys Ser Leu Arg Pro Asn Glu Glu
 340 345 350
 Lys Leu Ala Phe Ser Ala Ile Phe Asp Ile Thr Glu Lys Gly Glu Val
 355 360 365
 Arg Asp Ser Arg Ile Val His Thr Val Ile Glu Ser Asp Arg Arg Phe
 370 375 380
 Thr Tyr Glu Glu Ala Gln Gln Ile Ile Glu Thr Lys Glu Gly Asp Phe
 385 390 395 400
 Lys Asp Glu Ile Leu Met Leu Asp Thr Ile Ala Lys Ala Leu Arg Glu
 405 410 415
 Lys Arg Phe Thr Ala Gly Ala Ile Asn Phe Asp Arg Tyr Glu Val Lys
 420 425 430
 Phe Glu Ile Asp Glu Lys Gly Lys Pro Ile Ser Val Tyr Phe Lys Glu
 435 440 445
 Ser Lys Asp Ala Asn Lys Leu Val Glu Glu Phe Met Leu Leu Ala Asn
 450 455 460
 Arg Thr Val Ala Glu Lys Ile Gly Lys Ala Pro Lys Gly Lys Lys Pro
 465 470 475 480
 Lys Val Leu Pro Tyr Arg Ile His Asp Leu Pro Asp Pro Glu Lys Leu
 485 490 495
 Asp Asn Leu Ala Gln Phe Ile Ala Arg Phe Gly Tyr Arg Leu Arg Thr
 500 505 510
 Ser Gly Thr Lys Thr Asp Val Ser Lys Ser Ile Asn His Leu Leu Asp
 515 520 525
 Asp Ile Gln Gly Lys Lys Glu Glu Asn Leu Ile Glu Thr Val Ser Ile
 530 535 540
 Arg Ala Met Gln Lys Ala Arg Tyr Ser Thr His Asn Ile Gly His Tyr
 545 550 555 560
 Gly Leu Ala Phe Asp Tyr Tyr Thr His Phe Thr Ser Pro Ile Arg Arg
 565 570 575
 Phe Pro Asp Met Met Val His Arg Leu Val Thr Arg Tyr Met Asp Gly
 580 585 590
 Gly Arg Ser Val Ser Glu Thr Lys Tyr Glu Asp Leu Cys Asp His Ser
 595 600 605
 Ser Asn Met Glu Gln Ile Ala Ala Asn Ala Glu Arg Ala Ser Ile Lys

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<210> 7161
<211> 409
<212> PRT
<213> B.fragilis
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<400> 7161															
Lys 1	Ser	Leu	Met	Ile 5	Thr	Met	Tyr	Arg	Ile 10	Tyr	Met	Tyr	Leu	Leu 15	Ala
Ala	Cys	Leu	Leu 20	Leu	Gly	Val	Thr	Ala 25	Cys	Glu	Glu	Glu	Gly 30	Leu	Gly
Asn	Glu	Glu 35	Thr	Pro	Phe	Ala	Pro 40	Tyr	Val	Leu	Ser	Leu 45	Gly	Ile	Asn
Ser	Asn 50	Gly	Thr	Thr	Thr	Tyr 55	Tyr	Val	Val	Thr	Ala 60	Pro	Glu	Leu	Met
Ser 65	Gly	Thr	Ile	Asn 70	Ala	Val	Ala	Lys	Gly 75	Ile	Glu	Gln	Asn	Gly 80	Tyr
Arg	Asp	Tyr	Glu	Gln 85	Ala	Gly	Gln	Thr	Val 90	Phe	Ser	Ile	Gly 95	Gly	Leu
Gly	Leu	Thr	Ser 100	Ala	Thr	Gly	Ile	Val 105	Arg	Asp	Ala	Asn	Gly 110	Tyr	Leu
Thr	Glu	Arg 115	Gly	Asp	Phe	Val	Phe	Asn 120	Ser	Ser	Leu	Asn 125	Ala	Phe	Thr
Gln	Met 130	Asp	Gly	Gln	Asn	Met 135	Ile	Gly	Leu	Glu	Leu	Pro 140	Ala	Asn	Lys
Glu 145	Ser	Gly	Asp	Gln	Met 150	Thr	Leu	Tyr	Thr	Val	Asn	Ile	Ser	Asp	Val
Ser	Ile	Thr	Ser	Gln 165	Val	Lys	Ala	Pro	Val 170	Phe	Pro	Leu	Asn	Gln 175	Leu
Glu	Trp	Pro	Ser 180	Ile	Thr	Gly	Met	Cys 185	Tyr	Ser	Glu	Gly	Asn 190	Val	Tyr
Val	Thr	Tyr 195	Phe	Pro	Met	Asn	Pro	Ser	Thr	Phe	Glu	Thr	Leu	Tyr	Thr
Asp	Thr 210	Thr	Phe	Val	Ala	Val 215	Tyr	Ser	Tyr	Pro	Asp	Met	Gln	Phe	Lys
Thr 225	Leu	Met	Lys	Asp	Thr 230	Arg	Thr	Gly	Pro	Ala	Gly	Ser	Trp	Asn	Ala
Phe	Asn	Gly	Ile	Phe 245	Lys	Val	Glu	Ser	Gly 250	Asp	Met	Tyr	Ile	Met	Ser
Asn	Ser	Ala	Ile 260	Ala	Asn	Gly	Phe	Ser	Gln 265	Ser	Thr	Lys	Asn	Ala	Ala
Phe	Leu	Arg 275	Ile	Pro	Lys	Gly	Glu	Thr	His	Phe	Asp	Asp	Tyr	Tyr	Phe
Asp	Phe 290	Glu	Thr	Val	Ser	Gly 295	Gly	Leu	Lys	Pro	Ala	His	Ile	Lys	Tyr
Ile	Gly	Asn	Gly	Leu	Val	Phe	Ala	Glu	Val	Ser	Ser	Ile	Val	Arg	His

305 310 315 320
 Gln Ser Ala Asp Arg Trp Gly Asp Lys Ser Leu Lys Cys Cys Ile Ile
 325 330 335
 Asp Leu Asn Asn Lys Thr Val Arg Asp Ile Lys Glu Ile Pro Val His
 340 345 350
 Asn Gly Asp Gly Gly Arg Arg Phe Ala Ala Leu Val Asp Gly Gly Tyr
 355 360 365
 Val Tyr Arg Pro Val Thr Thr Ser Glu Gly Thr Tyr Ile Tyr Gln Val
 370 375 380
 Asp Pro Gln Ala Ala Thr Ala Val Arg Gly Ala Lys Val Ser Thr Thr
 385 390 395 400
 Phe Val Gly Gly Phe Phe Arg Leu Asp
 405

<210> 7162
 <211> 286
 <212> PRT
 <213> B.fragilis

<400> 7162
 Cys Ala Ala Val Gln Pro Arg Gly Glu Asp Leu Arg Thr Leu Asn Ser
 1 5 10 15
 Met Arg Lys Tyr Leu Ser Phe Ile Leu Leu Ile Gly Leu Thr Leu
 20 25 30
 Gln Ala Gln Glu Thr Tyr Lys Thr Val Lys Asp Ile Ser Tyr Ile Pro
 35 40 45
 Ala Gly Glu Thr Asp Gly Tyr Arg Lys Glu Arg Cys Lys Leu Asp Val
 50 55 60
 Tyr Tyr Pro Val Gly Lys Lys Asp Phe Pro Thr Ile Val Trp Phe His
 65 70 75 80
 Gly Gly Gly Leu Glu Gly Gly Gly Lys His Val Pro Glu Met Phe Met
 85 90 95
 Asn Gln Gly Phe Ala Ile Val Ala Val Asn Tyr Arg Leu Ser Pro Lys
 100 105 110
 Ala Gln Asn Pro Ala Tyr Thr Glu Asp Ala Ala Ala Val Ala Trp
 115 120 125
 Ala Tyr Lys His Ile Glu Glu Tyr Gly Gly Ser Pro Arg Arg Val Phe
 130 135 140
 Val Thr Gly His Ser Ala Gly Gly Tyr Leu Thr Leu Met Val Gly Leu
 145 150 155 160
 Asp Lys Ser Tyr Leu Gln Glu Tyr Gly Val Asp Ala Asp Ser Ile Ala
 165 170 175
 Ala Tyr Leu Pro Ile Ser Gly Gln Thr Val Thr His Phe Thr Ile Arg
 180 185 190
 Lys Glu Arg Ser Leu Pro Glu Gly Ile Pro Val Ile Asp Gln Tyr Ala
 195 200 205
 Pro Cys Asn Lys Ala Arg Lys Asp Thr Pro Pro Phe Val Leu Ile Thr
 210 215 220
 Gly Asp Arg Asn Leu Glu Met Ala Asp Arg Tyr Glu Glu Asn Ala Leu
 225 230 235 240
 Leu Ala Ser Val Leu Lys Asn Ile Gly Asn Lys Lys Val Ser Leu Tyr
 245 250 255
 Glu Leu Gln Gly Phe Asp His Gly Gln Val Tyr Val Pro Gly Cys Cys
 260 265 270
 Leu Val Ala Asn Tyr Ile Arg Asn Phe Ile Ala Asp Gly Arg
 275 280 285

<210> 7163
 <211> 64

<212> PRT
 <213> B.fragilis

<400> 7163

Tyr	Pro	Asn	Val	Tyr	Asn	Tyr	Ile	Ser	Ile	Tyr	Leu	Tyr	His	Leu	Glu
1				5					10					15	
Tyr	Phe	Ile	Phe	Leu	Ala	Ile	Phe	Ser	Glu	Asn	Gly	Leu	Phe	Phe	Ile
			20					25					30		
Ser	Ser	Cys	Ile	Ser	Val	Pro	Met	Ser	Pro	Asp	Ser	Lys	Ala	His	Ile
		35					40					45			
Asn	Ile	Ser	Glu	Gly	Thr	Val	Ile	Leu	Leu	Phe	Thr	Lys	Tyr	Tyr	Lys
	50					55					60				

<210> 7164

<211> 206

<212> PRT

<213> B.fragilis

<400> 7164

Lys	Val	Asn	Val	Met	Glu	Thr	Asn	Asp	Ile	Lys	Glu	Thr	Trp	Lys	Ala
1				5					10					15	
Gly	Ile	Glu	Arg	Thr	Ile	Lys	Pro	Tyr	Pro	Glu	Glu	Arg	Leu	Asn	Glu
			20					25					30		
Met	Val	Val	Asn	Ser	Ala	Arg	Lys	Ser	Ile	Lys	Thr	Val	Tyr	Pro	Gly
		35					40					45			
Thr	Val	Phe	Arg	Leu	Val	Ile	Ile	Ala	Val	Ala	Val	Phe	Leu	Ile	Val
	50					55					60				
Ser	Gln	Phe	Val	Lys	Glu	Gln	Asn	Ala	Thr	Arg	Met	Tyr	Leu	Asp	Met
65					70					75				80	
Gly	Ala	Leu	Ala	Val	Leu	Ser	Val	Ser	Tyr	Phe	Leu	Trp	Glu	Arg	Ser
			85						90					95	
Ala	Tyr	Lys	Met	Arg	Lys	Tyr	Thr	His	Gly	Met	Pro	Val	Lys	Glu	Trp
			100					105					110		
Leu	Glu	Tyr	Arg	Ile	Lys	Glu	Ile	Glu	Lys	Ser	Ile	Arg	Phe	Asn	Thr
		115					120					125			
Lys	Tyr	Asp	Trp	Ile	Val	Tyr	Thr	Cys	Ser	Phe	Leu	Ser	Ala	Ile	Gly
	130					135					140				
Phe	Tyr	Val	Phe	Tyr	Leu	Met	Ala	Thr	Asn	Val	Val	Pro	Gly	Ile	Leu
145					150					155					160
Asn	Val	Ile	Val	Ile	Pro	Leu	Gly	Met	Cys	Ile	Tyr	Leu	Leu	Ile	Ile
			165					170						175	
Lys	Arg	Ser	Leu	Lys	Arg	Asn	Tyr	Arg	Arg	Thr	Leu	Gln	Glu	Leu	Lys
			180					185					190		
Glu	Leu	Tyr	Arg	Gln	Phe	Glu	Ile	Glu	Asp	Gln	Glu	Gly	Arg		
		195					200					205			

<210> 7165

<211> 239

<212> PRT

<213> B.fragilis

<400> 7165

Val	Val	Leu	Leu	Thr	Glu	Arg	Ile	Lys	Ala	Ser	Leu	Glu	Thr	Asn	Ser
1				5					10					15	
Val	Tyr	Thr	Ile	Ser	Ala	Pro	Asn	Phe	Leu	His	Ile	Arg	Arg	Lys	Ala
			20					25					30		
Gly	Ser	Val	Thr	Ser	Ser	Ile	Gly	Ala	Arg	Asn	Thr	Gly	Arg	Ser	Pro
		35					40					45			
Arg	Ser	Met	Trp	Pro	Ile	Phe	Ile	Phe	Leu	Arg	Phe	Ser	Ile	His	Tyr

50	55	60
Leu Ala Ala Lys Val Arg Lys Lys Pro Leu Pro Leu His Leu Ile His		
65	70	75
Leu Phe Asn Trp Ile Glu Ile Met Lys Lys Arg Leu Phe Ser Ile Ala		80
	85	90
Leu Cys Leu Thr Phe Ile Leu Ser Ala Thr Ser Val Ser Ala Gln Asp		95
	100	105
Ala Ala Tyr Arg Glu Ala Leu Ser Lys Met Leu Glu Ala Ser Gly Ala		110
	115	120
Met Thr Thr Val Lys Ser Met Val Pro Gln Met Ile Gly Met Met Lys		125
	130	135
His Thr Tyr Ser Asn Val Pro Asp Glu Phe Trp Lys Asn Phe Glu Glu		140
145	150	155
Gln Leu Ser Glu Lys Ala Asn Thr Gln Phe Leu Asp Ile Tyr Val Ser		160
	165	170
Ile Tyr His Arg Tyr Leu Thr Ile Ser Asp Leu Lys Lys Ile Thr Ala		175
	180	185
Phe Tyr Glu Ser Pro Val Gly Lys Lys Leu Ala Glu Ser Thr Pro Val		190
	195	200
Met Thr Ala Glu Ala Met Glu Ala Gly Gln Gln Ile Gly Met Gly Ile		205
210	215	220
Ala Lys Glu Ile Met Ala Asn Leu Lys Glu Lys Gly Tyr Val Gln		
225	230	235

<210> 7166
 <211> 234
 <212> PRT
 <213> B.fragilis

<400> 7166

Asn Gln Ser Phe Met Trp Leu Ser Asn Ser Ser Val Gly Arg Lys Val	
1	5
Val Met Ser Val Thr Gly Ile Ala Leu Val Leu Phe Leu Thr Phe His	10
	15
	20
Met Ala Met Asn Leu Val Ala Ile Ser Ala Glu Gly Tyr Asn Leu	25
	30
	35
Val Cys Glu Phe Leu Gly Ala Asn Trp Tyr Ala Leu Val Ala Thr Leu	40
	45
	50
Gly Leu Ala Ala Leu Phe Val Ile His Ile Ile Tyr Ala Phe Trp Leu	55
65	60
	65
Thr Ile Gln Asn Arg Ala Ala Arg Gly Ser Glu Arg Tyr Ala Val Val	70
	75
	80
	85
Asp Lys Pro Lys Thr Val Glu Trp Ala Ser Gln Asn Met Leu Val Leu	90
	95
	100
Gly Ile Ile Val Ile Leu Gly Leu Gly Leu His Leu Phe Asn Phe Trp	105
	110
	115
Ala Lys Met Gln Leu Pro Glu Leu Val His Asn Met Gly Gly Val Ala	120
	125
	130
Asp Thr Thr Tyr Ala Ala Asp Gly Val Tyr His Ile Met Asn Thr Phe	135
145	140
	145
Ser Asn Pro Val Tyr Val Val Leu Tyr Leu Val Trp Leu Gly Ala Leu	150
	155
	160
	165
Trp Phe His Leu Thr His Gly Phe Trp Ser Ser Met Gln Ser Leu Gly	170
	175
	180
Trp Asn Asn Lys Ile Trp Ile Asn Arg Trp Lys Cys Ile Ser Asn Ile	185
	190
	195
Tyr Ser Thr Ile Val Val Val Cys Phe Ala Leu Val Val Val Val Phe	200
210	205
	210
Phe Val Lys Ser Leu Ala Cys Gly Ala Cys	215
	220

225

230

<210> 7167
 <211> 132
 <212> PRT
 <213> B.fragilis

<400> 7167

Lys	Tyr	Asn	Leu	Lys	Leu	Leu	Gly	Met	Asn	Glu	Gln	Lys	Glu	Leu	Thr
1				5					10					15	
Lys	Ala	Glu	Leu	Gln	Ile	Met	Gln	Val	Leu	Trp	Gln	Lys	Glu	Asn	Ala
			20					25					30		
Phe	Val	Asn	Glu	Ile	Leu	Gln	Glu	Leu	Glu	Glu	Pro	Arg	Pro	Ala	Tyr
		35					40					45			
Asn	Thr	Val	Ser	Thr	Val	Leu	Arg	Val	Leu	Gln	Asn	Lys	Gly	Phe	Val
	50					55					60				
Ala	Tyr	Arg	Ser	Phe	Gly	Lys	Asn	Tyr	Gln	Tyr	Tyr	Pro	Leu	Val	Ser
65					70					75					80
Lys	Glu	Ser	Tyr	Thr	Asn	Arg	Phe	Met	Asn	Arg	Val	Val	Asp	Asn	Phe
				85					90					95	
Phe	Ser	Gly	Ser	Val	Lys	Ala	Met	Val	Ser	Phe	Phe	Thr	Lys	Lys	Glu
			100					105					110		
Lys	Met	Ser	Val	Gln	Glu	Ile	Asp	Glu	Leu	Ile	Glu	Met	Leu	Lys	Glu
		115					120					125			
Asn	Lys	Lys	Glu												
	130														

<210> 7168
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 7168

Asn	Met	Asn	Lys	Lys	Asn	Leu	Leu	Ile	Ile	Ala	Val	Ser	Val	Leu	Val
1				5					10					15	
Leu	Ala	Leu	Ile	Gly	Leu	Thr	Tyr	Leu	Leu	Phe	Ser	Glu	Lys	Gln	Thr
			20					25					30		
Asn	Arg	Glu	Leu	Val	Gln	Glu	Phe	Gln	Leu	Asp	Lys	Glu	Asp	Leu	Glu
		35					40					45			
Asn	Glu	Tyr	Thr	Arg	Phe	Ala	Gln	Gln	Tyr	Asp	Glu	Leu	Lys	Leu	Thr
		50				55					60				
Val	Ser	Asn	Asp	Ser	Leu	Ala	Asp	Leu	Leu	Ala	Gln	Glu	Gln	Val	Lys
65					70					75					80
Thr	Gln	Arg	Leu	Leu	Glu	Glu	Leu	Arg	Thr	Val	Lys	Ser	Ser	Asn	Ala
				85					90					95	
Thr	Glu	Ile	Arg	Arg	Leu	Lys	Lys	Glu	Leu	Ala	Thr	Leu	Arg	Lys	Val
			100					105					110		
Met	Ile	Gly	Tyr	Ile	Asn	Gln	Ile	Asp	Ser	Leu	Asn	Lys	Leu	Thr	Ala
		115					120					125			
Gln	Gln	Lys	Gln	Val	Ile	Ala	Glu	Val	Thr	Gln	Lys	Tyr	Asn	Ala	Ala
		130				135					140				
Ser	Arg	Gln	Ile	Asn	Asn	Leu	Ser	Glu	Glu	Lys	Lys	Asn	Leu	Asn	Gln
145					150					155					160
Lys	Val	Thr	Leu	Ala	Gln	Leu	Asp	Ala	Thr	Asn	Ile	Trp	Ile	Glu	
			165					170					175		
Pro	Arg	Asn	Lys	Arg	Gly	Lys	Lys	Ala	Lys	Lys	Val	Lys	Asp	Ile	Val
			180					185					190		
Lys	Leu	Ala	Ile	Gly	Phe	Thr	Ile	Val	Lys	Asn	Ile	Thr	Ala	Glu	Thr
		195					200						205		

Gly Glu Arg Thr Leu Tyr Ile Arg Ile Thr Lys Pro Asp Asn Asp Ala
 210 215 220
 Leu Thr Lys Ser Pro Ser Asn Thr Phe Pro Tyr Glu Asn Arg Thr Leu
 225 230 235 240
 Thr Tyr Ser Ile Lys Lys Tyr Ile Glu Tyr Asn Gly Glu Glu Gln Thr
 245 250 255
 Ile Asn Val Phe Trp Asp Val Glu Glu Phe Leu Tyr Ala Gly Ala Tyr
 260 265 270
 Arg Val Asp Ile Phe Ala Asp Gly Thr Met Ile Gly Ser Gln Lys Phe
 275 280 285
 Thr Leu Asp
 290

<210> 7169

<211> 1097

<212> PRT

<213> B.fragilis

<400> 7169

Tyr Lys Met Lys Lys Leu Phe Met Ser Ala Val Ala Leu Leu Phe Ala
 1 5 10 15
 Gly Ala Leu Trp Ala Gln Glu Asn Pro Leu Trp Met Arg His Cys Ala
 20 25 30
 Ile Ser Pro Asp Gly Thr Thr Ile Ala Phe Thr Tyr Lys Gly Asp Ile
 35 40 45
 Phe Thr Val Pro Val Ser Gly Gly Lys Ala Thr Gln Ile Thr Thr Asn
 50 55 60
 Pro Ala Phe Asp Thr Thr Pro Ile Trp Ser Pro Asp Ser Lys Gln Ile
 65 70 75 80
 Ala Phe Ala Ser Asp Arg Met Gly Ser Met Asp Val Phe Ile Val Ser
 85 90 95
 Lys Asp Gly Gly Glu Pro Arg Arg Leu Thr Thr Phe Ser Gly Gly Glu
 100 105 110
 Thr Pro Val Ala Phe Thr Asp Ala Gly His Ile Leu Phe Thr Ala Asp
 115 120 125
 Ile Met Pro Ser Thr Glu Asp Ala Gly Phe Pro Ser Asn Gly Gln Phe
 130 135 140
 Gln Gln Ile Tyr Gln Ile Pro Val Ser Gly Gly Arg Pro Val Met Phe
 145 150 155 160
 Ser Ser Met Pro Met Glu Cys Ile Ser Ile Asn Lys Glu Gly Thr Ile
 165 170 175
 Leu Tyr Gln Asp Lys Lys Gly Tyr Glu Asp Tyr Trp Arg Lys His Gln
 180 185 190
 Lys Ser Pro Ile Ala Arg Asp Ile Trp Met Leu Arg Pro Gly Gln Thr
 195 200 205
 Pro Arg Tyr Glu Lys Gln Thr Thr Phe Ile Gly Glu Asp Arg Glu Pro
 210 215 220
 Val Trp Ala Pro Asp Gly Lys Ser Phe Tyr Tyr Leu Ser Glu Glu Asn
 225 230 235 240
 Gly Thr Phe Asn Val Tyr Gln Arg Thr Pro Gly Ser Asp Thr Ser Lys
 245 250 255
 Gln Val Thr His Lys Gln His Pro Val Arg Phe Leu Ser Met Ala
 260 265 270
 Ser Asn Gly Asn Leu Cys Tyr Gly Phe Asp Gly Glu Ile Tyr Thr Leu
 275 280 285
 Ala Pro Gly Gly Lys Pro Gln Lys Val Ser Val Lys Ile Leu Ser Asp
 290 295 300
 Arg Asn Asp Lys Asp Leu Ile Arg Gln Ile Lys Thr Ser Gly Ala Thr
 305 310 315 320

Glu Met Ala Val Ser Pro Asp Gly Lys Glu Val Ala Phe Ile Leu Arg
 325 330 335
 Gly Asp Val Tyr Val Thr Ser Val Glu Tyr Lys Thr Thr Lys Gln Val
 340 345 350
 Thr Asn Thr Pro Cys Gln Glu Arg Gly Ile Asp Phe Ala Pro Asp Gly
 355 360 365
 Arg Thr Leu Val Tyr Ala Ser Glu Arg Gly Gly Leu Trp Gln Leu Tyr
 370 375 380
 Thr Ser Thr Ile Val Arg Lys Asp Glu Lys Gln Phe Thr Tyr Ala Thr
 385 390 395 400
 Glu Leu Lys Glu Glu Arg Leu Thr Asn Ser Asp Val Ala Ser Phe Asn
 405 410 415
 Pro Lys Tyr Ser Pro Asp Gly Lys Glu Ile Ala Phe Leu Glu Asn Arg
 420 425 430
 Thr Ala Ile Arg Val Ile Asn Leu Lys Thr Lys Lys Val Arg Thr Val
 435 440 445
 Met Asp Ala Gln Tyr Gln Tyr Ser Tyr Ser Asp Gly Asp Gln Trp Phe
 450 455 460
 Glu Trp Ser Pro Asp Ser Lys Trp Ile Leu Ser Glu Phe Ile Gly Ile
 465 470 475 480
 Gly Gly Trp Asn Asn Lys Asp Ile Val Leu Leu Asn Ala Asp Gly Lys
 485 490 495
 Gly Glu Met His Asn Leu Thr Glu Ser Gly Tyr Ser Asp Gly Asn Ala
 500 505 510
 Lys Trp Val Leu Gly Gly Lys Ala Met Val Trp Phe Ser Asp Arg Ala
 515 520 525
 Gly Tyr Arg Ser His Gly Ser Trp Gly Ala Gln Tyr Asp Ala Tyr Ile
 530 535 540
 Met Phe Phe Asp Val Asp Ala Tyr Asp Arg Phe Arg Met Asn Lys Glu
 545 550 555 560
 Asp Leu Ala Leu Leu Glu Glu Ala Glu Lys Ala Glu Lys Ala Glu Lys
 565 570 575
 Glu Lys Ala Glu Lys Lys Lys Lys Glu Asn Lys Lys Asp Asp Lys Lys
 580 585 590
 Lys Asp Ala Lys Glu Lys Asn Lys Lys Asp Gly Asp Glu Glu Lys Lys
 595 600 605
 Glu Glu Val Lys Pro Leu Lys Phe Asp Leu Asp Asn Arg Phe Asp Arg
 610 615 620
 Ile Val Arg Leu Thr Val Asn Ser Ser Phe Met Gly Asp Ala Val Leu
 625 630 635 640
 Thr Pro Lys Gly Asp Lys Leu Tyr Tyr Leu Ala Ala Phe Glu Ser Gly
 645 650 655
 Tyr Asp Leu Trp Glu His Asp Leu Lys Glu Asn Ser Thr Lys Ile Leu
 660 665 670
 Leu Lys Gly Val Gly Gly Gly Ser Leu Leu Pro Asp Lys Lys Gly Glu
 675 680 685
 Asn Ile Phe Met Cys Thr Gly Gly Gly Met Lys Lys Ile Glu Ile Ala
 690 695 700
 Gly Ser Lys Thr Thr Pro Ile Ala Phe Glu Ser Phe Phe Asp Tyr Gln
 705 710 715 720
 Pro Gly Gly Glu Arg Ala Tyr Ile Phe Asp His Val Trp Gln Gln Val
 725 730 735
 Asp Asp Lys Phe Tyr Val Lys Asp Leu Gln Gly Val Asp Trp Pro Leu
 740 745 750
 Tyr Lys Lys Ser Tyr Glu Lys Phe Leu Pro Tyr Ile Asn Asn Asn Tyr
 755 760 765
 Asp Phe Ala Glu Leu Leu Ser Glu Met Leu Gly Glu Leu Asn Ala Ser
 770 775 780
 His Thr Gly Ala Arg Tyr Ser Gly Ala Gly Gly Ala Leu Ala Thr Ala

785 790 795 800
 Ala Leu Gly Val Phe Tyr Asp Asp Thr Tyr Asn Gly Asp Gly Leu Lys
 805 810 815
 Ile Lys Glu Ile Ile Glu Gln Gly Pro Phe Thr Leu Lys Lys Thr Asp
 820 825 830
 Val Lys Pro Gly Cys Ile Ile Glu Lys Val Asp Gly Thr Leu Ile Lys
 835 840 845
 Lys Gly Glu Asp Tyr Phe Pro Leu Phe Glu Gly Lys Val Gly Arg Lys
 850 855 860
 Val Leu Leu Ser Val Tyr Asp Pro Ala Thr Lys Lys Arg Phe Glu Glu
 865 870 875 880
 Thr Val Lys Ala Ile Ser Tyr Gly Ala Gln Arg Glu Leu Leu Tyr Lys
 885 890 895
 Arg Trp Val Glu Arg Asn Arg Lys Lys Val Glu Glu Leu Ser Gly Gly
 900 905 910
 Arg Leu Gly Tyr Val His Ile Lys Gly Met Asp Ser Gln Ser Phe Arg
 915 920 925
 Lys Met Tyr Ser Glu Leu Leu Gly Arg Tyr Arg Asn Lys Glu Ala Val
 930 935 940
 Val Val Asp Val Arg His Asn Gly Gly Gly Trp Leu His Asp Asp Val
 945 950 955 960
 Val Thr Leu Leu Ser Gly Lys Glu Tyr Gln Arg Phe Val Pro Arg Gly
 965 970 975
 Gln Tyr Ile Gly Ser Asp Pro Phe Asn Lys Trp Leu Lys Pro Ser Cys
 980 985 990
 Met Leu Val Cys Glu Asp Asn Tyr Ser Asn Ala His Gly Thr Pro Tyr
 995 1000 1005
 Val Tyr Lys Thr Leu Gly Ile Gly Lys Leu Val Gly Thr Pro Val Ala
 1010 1015 1020
 Gly Thr Met Thr Ala Val Trp Trp Glu Arg Gln Ile Asp Pro Ser Leu
 1025 1030 1035 1040
 Val Phe Gly Ile Pro Gln Val Gly Cys Met Asp Met Gln Gly Asn Tyr
 1045 1050 1055
 Leu Glu Asn His Thr Leu Glu Pro Asp Val Leu Ile Tyr Asn Glu Pro
 1060 1065 1070
 Ala Ala Ser Leu Lys Gly Glu Asp Ala Gln Leu Lys Ala Ala Val Asp
 1075 1080 1085
 Cys Leu Leu Lys Glu Leu Pro Lys Lys
 1090 1095

<210> 7170
 <211> 731
 <212> PRT
 <213> B.fragilis

<400> 7170
 Gly Met Ile Asp Phe Asp Tyr Ser Glu Trp Ala Ile Leu Arg Phe Ile
 1 5 10 15
 Gly Ala Ser Phe Val Leu Trp Leu Cys Tyr Tyr Leu Leu Phe Asp Arg
 20 25 30
 Lys Ala Pro Phe Asn Gln Cys Arg Asn Tyr Leu Leu Phe Ser Val Leu
 35 40 45
 Leu Ala Gly Ala Val Ser Val Leu Arg Ile Pro Val Tyr Pro Val Glu
 50 55 60
 Val Val Lys Pro Val Lys Met Glu Gln Ile Val Val Ala Gln Glu Ala
 65 70 75 80
 Gln Thr Asp Lys Val Ser Leu Met Gln Ile Asp Asn Asn Gly Ile Gln
 85 90 95
 Pro Asp Thr Leu Ala Thr Ala Met Leu Thr Asp Val Asn Glu Ala Val

	100		105		110
Thr	His	Gln	Thr	Glu	Glu
	115				
Trp	Asn	Tyr	Trp	Gln	Ile
	130				
Ile	Leu	Leu	Val	His	Leu
	145				
Lys	Arg	Trp	Gly	Thr	Thr
Arg	Asn	Asn	Glu	Val	Val
Ile	Asn	Arg	Lys	Leu	Glu
Glu	Lys	Ala	His	Ile	Arg
Glu	Gly	Leu	Ser	Ile	Leu
Lys	Arg	Glu	Leu	Arg	Ala
Leu	Ser	Gly	Glu	Ile	Glu
Glu	Leu	Met	Gly	Tyr	Ser
Leu	Ile	Lys	Lys	Arg	Phe
Leu	Ala	Gly	Val	Arg	Lys
Leu	Ala	Leu	Phe	Ser	Phe
Leu	Pro	Met	Val	Ser	Val
Leu	Pro	Glu	Val	Thr	Val
Leu	Leu	Asp	Thr	Pro	Lys
His	Ile	Val	Gln	Ser	Gly
Phe	Val	Pro	Lys	Ala	Leu
Thr	Phe	Ser	Gln	Glu	Gln
Arg	Ala	Asp	Gln	Val	Val
Tyr	Val	Arg	Phe	Ile	Glu
Ala	Ile	Pro	Ile	His	Tyr
Leu	Ser	Ile	Val	Asp	Glu
Val	Thr	Arg	Gly	Ile	Glu
Glu	Gly	Gln	Met	Leu	Glu
Lys	Val	Lys	Thr	Val	Ser
Leu	Thr	Pro	Pro	Asn	Gly
Asp	Asn	Phe	Gln	Pro	Thr

Gly Arg Pro Leu Arg Ser Asp Lys Leu Glu Glu Val Thr Leu Asn Ala
 580 585 590
 Asn Gln Leu Ser Val Ser Ser Arg His Asn Gly Gly Arg Thr Gln Ile
 595 600 605
 Gln Lys Ile Glu Thr Leu Pro Asp Lys Thr Leu Val Val Leu Ser Val
 610 615 620
 Pro Ile His Tyr Asp Arg Asn Trp Leu Val Ile Asn Lys Gly Leu Cys
 625 630 635 640
 Ile Val Asp Cys Lys Thr Gly Asp Glu Tyr Pro Val Leu Glu Glu Ala
 645 650 655
 His Gly Ile Glu Met Asn Lys Leu Leu Trp Val Glu Gly Cys Gln Gly
 660 665 670
 Ser Ser Val Leu Leu Thr Leu Val Phe Pro Lys Leu Pro Lys Arg Val
 675 680 685
 Lys Thr Ile Asp Phe Tyr Asn Lys Tyr Pro Asp Ala Gly Ile Ile Ser
 690 695 700
 Pro Thr Asn Gly Ser Ser Trp Asn Trp Trp Lys Ile Lys Ile Lys Asp
 705 710 715 720
 Tyr Gln Lys Glu Pro Tyr Lys Arg Val Ile Leu
 725 730

<210> 7171

<211> 76

<212> PRT

<213> B.fragilis

<400> 7171

Thr Ile Phe Gly Val Ser Ser Asn Lys Lys Ser Phe Ser Leu Pro Ala
 1 5 10 15
 Leu Ser Thr Val Thr Ser Gly Asn Thr Thr Phe Gly Val Ser Ala Phe
 20 25 30
 Ile Val Thr Asp Thr Ile Gly Asn Thr Gly Ser Thr Ser Thr Gly Phe
 35 40 45
 Ser Val Lys Glu Asn Lys Ala Asn Thr Pro Ile His Lys Gly Ser Asn
 50 55 60
 Ala Ile Leu Arg Thr Pro Ala Lys Arg Ser Leu Tyr
 65 70 75

<210> 7172

<211> 317

<212> PRT

<213> B.fragilis

<400> 7172

Asn Ile Ser Ile Met Ser Lys Val Thr Val Val Gly Ala Gly Asn Val
 1 5 10 15
 Gly Ala Thr Cys Ala Asn Val Leu Ala Phe Asn Glu Val Ala Asp Glu
 20 25 30
 Val Val Met Leu Asp Val Lys Glu Gly Val Ser Glu Gly Lys Ala Met
 35 40 45
 Asp Met Met Gln Thr Ala Gln Leu Leu Gly Phe Asp Thr Thr Ile Val
 50 55 60
 Gly Cys Thr Asn Asp Tyr Ala Gln Thr Ala Asn Ser Asp Val Val Val
 65 70 75 80
 Ile Thr Ser Gly Ile Pro Arg Lys Pro Gly Met Thr Arg Glu Glu Leu
 85 90 95
 Ile Gly Val Asn Ala Gly Ile Val Lys Ser Val Ala Glu Asn Leu Leu
 100 105 110
 Lys Tyr Ser Pro Asn Ala Ile Ile Val Val Ile Ser Asn Pro Met Asp

115	120	125
Thr Met Thr Tyr Leu Ala Leu Lys Ser Leu Gly Leu Pro Lys Asn Arg		
130	135	140
Val Ile Gly Met Gly Gly Ala Leu Asp Ser Ser Arg Phe Lys Tyr Phe		
145	150	155
Leu Ser Gln Ala Leu Gly Cys Asn Ala Asn Glu Val Glu Gly Met Val		
	165	170
Ile Gly Gly His Gly Asp Thr Thr Met Ile Pro Leu Ala Arg Leu Ala		
	180	185
Thr Tyr Lys Gly Gln Pro Val Ser Thr Leu Leu Ser Glu Glu Lys Leu		
	195	200
Asn Glu Val Val Ala Ser Thr Met Val Gly Gly Ala Thr Leu Thr Lys		
	210	215
Leu Leu Gly Thr Ser Ala Trp Tyr Ala Pro Gly Ala Ala Gly Ala Tyr		
225	230	235
Val Val Glu Ser Ile Ile His Asn Gln Lys Lys Met Val Pro Cys Ser		
	245	250
Val Met Leu Glu Gly Glu Tyr Gly Glu Ser Asp Leu Cys Ile Gly Val		
	260	265
Pro Val Ile Leu Gly Lys Asn Gly Ile Glu Lys Ile Val Glu Leu Glu		
	275	280
Leu Asn Ala Asp Glu Lys Ala Lys Phe Ala Ala Ser Ala Ala Ala Val		
	290	295
His Lys Thr Asn Ala Ala Leu Lys Glu Val Gly Ala Leu		
305	310	315

<210> 7173

<211> 676

<212> PRT

<213> B.fragilis

<400> 7173

Arg Leu Ile Ile Leu Ile Leu Cys Ile Cys Ser Ser Leu Gln Met Gln	
1	5
Gly Ala Leu Ser Ala Leu Lys Gly Gly Lys Ser Asn Leu Ala Leu His	10
	15
	20
Leu Asp Gly Lys Asp Asn Asn Val Arg Thr Gly Met Gly Ile Leu Glu	25
	30
	35
Pro Ser Trp Thr Leu Glu Ser Trp Ile Lys Gly Asp Asp Cys Gln Trp	40
	45
	50
Asp Ser Leu Glu Val Ile Ile Gly Gly Gly Glu Tyr Ser Glu Leu Asn	55
	60
	65
Trp Val Asp Tyr Leu Pro Leu Val Val Lys Glu Gly Lys Ile His Ser	70
	75
	80
	85
Ser Arg Ala Asn Leu Ser Ser Pro Gln Thr Leu Asp Asp Gln Trp His	90
	95
	100
His Val Ala Leu Thr Cys Asp Gly Lys Gln Thr Ile Leu Tyr Leu Asp	105
	110
	115
Gly Lys Gln Val Asp Lys Ala Asp Thr Ala Thr Ala Ile Leu Pro Gly	120
	125
	130
Ala Ile Gly Val His Asp Val Tyr Tyr Thr Phe Gly Gly Leu Ile Asp	135
	140
	145
Glu Val Arg Val Trp Arg Ser Ala Leu Pro Glu Gln Thr Ile Arg Arg	150
	155
	160
	165
Trp Met Asn Arg Pro Val Glu Ala Thr His Pro Ala Phe Lys Ser Leu	170
	175
	180
Trp Gly Tyr Tyr Asn Phe Asp Asp Leu Lys Asp Glu Thr Ser Val Asn	185
	190
	195
Trp Val Gly Lys Gly His Gln Ala Tyr His Ile Arg Asn Gly Arg Asn	200
	205

210	Lys Tyr Asn Glu Lys	215	Ala Pro Leu Ala His Ala	220	Val Pro Asn Asp Asn
225	Pro Ala Phe Lys Glu	230	Phe Asp Gly Asn Gln Gln	235	Leu Phe Asn Ala Val
	245		250		255
Ile Ile Gln Ser Glu	260	Trp Asp Ala Asp	265	Gln Gly Ser Lys	270
Ala Leu Lys Leu Arg	275	Ile Ala Val Gln Gly	280	Ser Lys Asn Pro	285
Leu Thr Glu Leu Lys	290	Leu Asp Phe Thr Gly	295	Thr Thr Asp Leu	300
Ile Glu Gln Ile His	305	Ile Tyr Ser Thr Gly	310	Ser Glu Ala Arg	315
Gln Arg Lys Glu Leu	325	Phe Gly Asn Gly	330	His Thr Pro Glu	335
Thr Leu Arg Pro Thr	340	His Gly Glu Glu	345	Ile Leu Leu Gln	350
Asn Tyr Phe Leu Leu	355	Thr Phe Asp Val	360	Arg Ser Lys Ala	365
His Thr Leu Tyr Ala	370	Ser Val Pro Phe	375	Phe Lys Leu Asn	380
Ile Ile Pro Gly Thr	385	Ser Ala Glu Glu	390	Val Arg Lys Gln	395
Asn Asn Gln Thr Gln	405	Ser Asn Ile Val	410	Lys Val Leu Gln	415
Trp His Gly Gly Ile	420	His Leu Gly Asn	425	Glu Gly Gln Gln	430
Asp Leu Ile Arg Ser	435	Ser Arg Ala Asp	440	Val Ile Met Met	445
Tyr Gly Ile Gln Gln	450	Met Leu Ala Asp	455	Ser Leu Gly Tyr	460
Thr His Ser Leu Lys	465	Asp Asn Leu Ala	470	Met Tyr Ser Arg	475
Glu Ala Ile Ala Trp	485	Arg Glu Pro Phe	490	Lys Ser Asn Pro	495
Thr Leu Pro Asn Gly	500	Lys Arg Ile Met	505	Phe Val Asp Cys	510
Tyr Ala Tyr Arg Pro	515	Glu Tyr Thr Ser	520	Gly Tyr Ala Glu	525
Asp Pro Ser Val Trp	530	Val Ala Glu Asp	535	Ser Ile Leu Ala	540
Ile Arg Asn Ile Tyr	545	Thr Lys Asp Ile	550	Ala Pro Asn Leu	555
Met Pro Val Ile Val	565	Thr Gly Asp Phe	570	Asn Ser Cys Ser	575
Trp Thr Glu Arg Ala	580	Lys Pro Leu His	585	His Gly Tyr Gly	590
Phe Pro Ala Ser Arg	595	Tyr Met Leu Glu	600	Asn Gly Phe Lys	605
Arg Glu Lys Asn Pro	610	Asp Glu Val Ala	615	Tyr Gln Gly Gly	620
Ala Ile Tyr Gly Gln	625	Met Gln Met Ser	630	Arg Ile Asp Phe	635
Lys Gly Gly Leu Lys	645	Val Leu Ser Ser	650	Lys Ile Val Arg	655
Glu Ile Asp Tyr Val	660	Trp Ala Ser Asp	665	His Ala Ala Val	670
Phe Glu Val Glu	675				

<210> 7174
 <211> 762
 <212> PRT
 <213> B.fragilis

<400> 7174

Cys	Met	Thr	Lys	Arg	Thr	Cys	Gln	Phe	Pro	Lys	His	Thr	Cys	Leu	Arg
1				5					10					15	
Glu	Ile	Asn	Phe	Leu	Lys	Ile	Ala	Gly	Ile	Ser	Leu	Leu	Leu	Phe	Cys
			20					25					30		
Thr	Thr	Ser	Gln	Ile	Ala	Val	Ala	Asp	Ser	Tyr	Glu	Lys	Asn	Ala	Val
		35					40					45			
Thr	Ala	Thr	Gln	Gln	Ser	Lys	Thr	Glu	Lys	Ile	Thr	Gly	Lys	Ile	Val
	50					55					60				
Asp	Glu	Ser	Gly	Glu	Ala	Ile	Ile	Gly	Ala	Ser	Val	Lys	Val	Gln	Gly
65					70					75				80	
Ser	Thr	Ile	Gly	Thr	Ile	Thr	Asn	Met	Glu	Gly	Glu	Phe	Met	Ile	Pro
				85					90					95	
Asn	Val	Pro	Asn	Lys	Ala	Val	Leu	Glu	Ile	Ser	Tyr	Ile	Gly	Tyr	Lys
			100					105					110		
Pro	Leu	Glu	Val	Ala	Val	Gly	Lys	Ser	Lys	Asp	Leu	Arg	Ile	Thr	Met
		115					120					125			
Glu	Glu	Asp	Thr	Lys	Thr	Leu	Asp	Glu	Val	Ile	Val	Val	Gly	Tyr	Gly
	130					135					140				
Thr	Thr	Ser	Lys	Arg	Lys	Thr	Thr	Ala	Ala	Ile	Ala	Ser	Val	Asn	Thr
145					150					155				160	
Glu	Asp	Ile	Ile	Lys	Ala	Pro	Thr	Ala	Asn	Ile	Thr	Gln	Ser	Leu	Ala
				165				170						175	
Gly	Arg	Ala	Pro	Gly	Leu	Leu	Val	Thr	Thr	Ser	Gly	Gly	Gly	Leu	Asn
			180					185				190			
Asn	Phe	Ser	Ser	Val	Ser	Ile	Arg	Gly	Gly	Gly	Thr	Pro	Leu	Tyr	Val
		195					200					205			
Ile	Asp	Asp	Val	Ile	Ser	Glu	Glu	Arg	Asp	Phe	Arg	Asn	Leu	Asn	Ala
	210					215					220				
Glu	Asp	Ile	Asp	Gln	Ile	Thr	Ile	Leu	Lys	Asp	Ala	Ala	Ser	Thr	Ala
225					230					235				240	
Val	Tyr	Gly	Ala	Arg	Ala	Ala	Asn	Gly	Ile	Val	Met	Ile	Val	Thr	Lys
				245					250					255	
Gln	Gly	Lys	Ala	Gly	Lys	Met	Ser	Val	Asn	Tyr	Asn	Phe	Asn	Tyr	Asn
			260					265					270		
Trp	Ser	Gln	Pro	Ala	Asn	Met	Pro	Asn	Lys	Leu	Asp	Ala	His	Asp	Ala
		275					280					285			
Ala	Phe	Tyr	Lys	Asn	Met	Ser	Met	Thr	Asn	Asp	Gly	Leu	Ala	Pro	Ala
	290					295					300				
Tyr	Thr	Asp	Asp	Glu	Leu	Glu	Leu	Phe	Arg	Asn	Gly	Ser	Asp	Pro	Arg
305					310					315				320	
Arg	Tyr	Pro	Asn	Thr	Asp	Trp	Gln	Lys	Leu	Cys	Leu	Lys	Asn	Ser	Ala
				325					330					335	
Pro	Glu	Met	Gln	His	Thr	Leu	Thr	Val	Thr	Gly	Gly	Ser	Glu	Lys	Ile
			340					345					350		
Lys	Ala	Tyr	Thr	Ser	Leu	Gly	Phe	Tyr	Asp	Gln	Lys	Ser	Leu	Tyr	Lys
		355					360					365			
Phe	Asp	Val	Asn	Ser	Phe	Lys	Arg	Tyr	Asn	Phe	Arg	Thr	Asn	Ile	Val
	370					375					380				
Ala	Asp	Phe	Lys	Glu	Ile	Gly	Leu	Lys	Val	Thr	Ser	Ser	Ile	Glu	Ala
385					390					395				400	
Tyr	Lys	Thr	Asp	Leu	Arg	Ser	Pro	Asn	Ala	Lys	Ser	Gly	Asp	Ser	Tyr
				405					410					415	

Tyr His Thr Trp Gly His Ile Gln Asn Lys Ala Pro Trp Glu Ile Ala
 420 425 430
 Tyr Asn Pro Asn Gly Gln Ile Phe Asn Thr Pro Asp Asn Pro Leu Met
 435 440 445
 Glu Ile Ser Pro Asp Ala Gly Tyr Thr Lys Asn Glu Asn Leu Ser Ala
 450 455 460
 Ile Ala Asn Leu Ala Leu Glu Trp Ser Val Pro Tyr Val Pro Gly Leu
 465 470 475 480
 Arg Leu Lys Ala Leu Gly Asn Tyr Arg Ile Asn Asn Asp Lys Ser Lys
 485 490 495
 Ser Trp Lys Lys Ser Pro Leu Ala Tyr Asp Trp Asp Gly Asn Pro Asn
 500 505 510
 Asp Pro Gly Lys Pro Ser Leu Ser Lys Ser Tyr Ser Asn Trp Ser Ser
 515 520 525
 Tyr Thr Val Gln Gly Phe Ala Asn Tyr Asp Arg Thr Phe Asn Gln Val
 530 535 540
 His Thr Ile Ser Ala Thr Ala Gly Ile Glu Ala Tyr Lys Leu Phe Lys
 545 550 555 560
 Asp Asp Ala Ser Leu Ser Arg Glu Glu Tyr Leu Leu Asp Val Asp Gln
 565 570 575
 Ile Gly Ala Gly Pro Val Ser Thr Ala Lys Asn Ser Ser Ser Glu Gly
 580 585 590
 Glu Glu Ala Arg Ala Gly Val Val Ala Arg Leu Lys Tyr Asp Tyr Ala
 595 600 605
 Ser Lys Tyr Val Ala Glu Ala Ser Leu Arg Tyr Asp Gly Ser Asp Asn
 610 615 620
 Phe Pro Arg Gly Lys Arg Trp Gly Thr Phe Tyr Ala Gly Ser Leu Ala
 625 630 635 640
 Trp Val Ile Ser Glu Glu Ser Phe Trp Gln Thr Leu Lys Asp Arg His
 645 650 655
 Ile Phe Asp Gln Phe Lys Val Arg Ala Ser Tyr Gly Glu Ile Gly Ser
 660 665 670
 Asp Ala Ile Gly Arg Tyr Ala Tyr Leu Gln Ser Tyr Gly Leu Asn Asp
 675 680 685
 Arg Gly Tyr Leu Leu Asn Gly Ser Trp Tyr Pro Gly Phe Ser Glu Gly
 690 695 700
 Ala Leu Val Ser Lys Asp Ile Thr Trp Tyr Thr Arg Asp Phe Asn
 705 710 715 720
 Ile Gly Phe Asp Phe Gly Ser Leu Asn Asn Arg Leu Ser Gly Ser Val
 725 730 735
 Asp Tyr Phe Arg Lys Ser Thr Lys Gly Tyr Leu Thr Ser Pro Ser Ala
 740 745 750
 Val Ala Tyr Thr Asp Pro Leu Gly Ser Leu
 755 760

<210> 7175

<211> 60

<212> PRT

<213> B.fragilis

<400> 7175

Lys Arg Ala Leu Phe Leu Lys Asp Ile Ile His Leu Leu Phe Lys Asp
 1 5 10 15
 Ile Ile Ile Ile Leu Ile Ser Thr Ser Arg Phe Glu Ile Lys Arg Lys
 20 25 30
 Asn Gln Pro Asn Asp Thr Ile Pro Gln Tyr Gly Asp Glu Ile Asn His
 35 40 45
 Thr Lys Asn Glu Ile Cys Val Lys Asn Gly Ile Ile
 50 55 60

<210> 7176
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 7176

Leu	Tyr	Ser	Gly	Lys	Leu	Asn	Asn	Ser	Ile	Leu	Tyr	Ala	Asn	Phe	Ile
1				5					10					15	
Leu	Cys	Met	Ile	Tyr	Phe	Val	Ser	Val	Leu	Gly	Asn	Cys	Ile	Val	Arg
			20					25					30		
Leu	Ile	Phe	Ser	Phe	Asp	Leu	Glu	Ala	Arg	Gly	Thr	Tyr	Gln	Asn	Asp
		35					40					45			
Asn	Tyr	Val	Phe	Glu	Glu	Gln	Met	Asp	Asp	Ile	Phe	Gln	Glu		
	50					55					60				

<210> 7177
 <211> 227
 <212> PRT
 <213> B.fragilis

<400> 7177

Gln	Val	Ala	Val	Lys	Ala	Lys	Ser	Ile	Phe	Ala	Asp	Lys	Thr	Val	Pro
1				5				10					15		
Lys	Thr	Thr	Val	Val	Ser	Tyr	Pro	Ile	Tyr	His	Ile	Glu	Asn	Ile	Val
			20					25					30		
Lys	Pro	Val	Ser	Lys	Gly	Pro	His	Ala	Lys	Gln	Val	Ile	Phe	Leu	Ser
		35					40					45			
Ala	Asp	Ala	Phe	Gly	Val	Leu	Pro	Pro	Val	Ser	Ile	Leu	Asn	Pro	Glu
	50					55					60				
Gln	Ala	Gln	Tyr	Tyr	Phe	Leu	Ser	Gly	Phe	Thr	Ala	Lys	Leu	Ala	Gly
65					70					75				80	
Thr	Glu	Arg	Gly	Ile	Thr	Glu	Pro	Thr	Pro	Thr	Phe	Ser	Ala	Cys	Phe
				85					90					95	
Gly	Ala	Ala	Phe	Leu	Ser	Leu	His	Pro	Thr	Lys	Tyr	Ala	Glu	Glu	Leu
			100					105					110		
Val	Lys	Lys	Met	Glu	Met	Thr	Gly	Ala	Lys	Ala	Tyr	Leu	Val	Asn	Thr
		115					120					125			
Gly	Trp	Asn	Gly	Ser	Gly	Lys	Arg	Ile	Ser	Ile	Lys	Asp	Thr	Arg	Gly
	130					135					140				
Ile	Ile	Asp	Ala	Ile	Leu	Asp	Gly	Ser	Ile	Asp	Lys	Ala	Pro	Thr	Lys
145					150					155				160	
Val	Ile	Pro	Phe	Phe	Asp	Phe	Val	Val	Pro	Thr	Glu	Leu	Pro	Gly	Val
				165					170					175	
Asp	Pro	Lys	Ile	Leu	Asp	Pro	Arg	Asp	Thr	Tyr	Ala	Asp	Pro	Ala	Gln
			180					185					190		
Trp	Asn	Glu	Lys	Ala	Lys	Asp	Leu	Ala	Gly	Arg	Phe	Ile	Lys	Asn	Phe
		195					200					205			
Ala	Lys	Phe	Thr	Gly	Asn	Glu	Ala	Gly	Lys	Lys	Leu	Val	Ala	Ala	Gly
	210					215					220				
Pro	Lys	Leu													
225															

<210> 7178
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 7178

Gly Leu Cys Ser Phe Phe Leu Val Ile Tyr Val Ser Phe His Thr Phe
 1 5 10 15
 Pro Val Lys Ile Pro Phe Thr Ser Ser Glu Ser Leu His Pro Leu Thr
 20 25 30
 Lys Gly Ser Ile Lys Ser Asn Asn Asn Lys Tyr Leu Tyr Phe Ile Phe
 35 40 45
 Phe Tyr Phe Phe Ile Pro Phe Leu Ile Ser Asn Ala Ser Ile Val Gly
 50 55 60
 Ser Cys Pro Leu Lys Arg Leu
 65 70

<210> 7179
 <211> 375
 <212> PRT
 <213> B.fragilis

<400> 7179

Glu Val Glu Pro Val Glu Lys Asn His Ile Ala Cys Ser Asn Arg Arg
 1 5 10 15
 Arg Val Arg Thr Ser Arg Leu His Arg Pro Pro Arg Ser Arg His Arg
 20 25 30
 Phe Val Trp His Cys Arg Thr Asn Arg Ser Ala Ile His Arg Leu Arg
 35 40 45
 Asn Asn Arg Ser Gly Cys Asp Ser Gly Cys Cys Phe Arg Ser Val Arg
 50 55 60
 Thr Ser Phe Arg Pro Arg Gln Arg Ile Leu Arg Pro Phe Ile Thr Ser
 65 70 75 80
 Asn Ser Gly Ser Gln Ser Arg His Leu Phe Pro Val Ser Ile Asp Arg
 85 90 95
 Arg Ser Thr Arg Arg Ser Ile Arg Leu Pro Tyr Gly Tyr Tyr Tyr Ser
 100 105 110
 Thr Met Lys Thr Asn Tyr His Thr His Thr Thr Arg Cys Met His Ala
 115 120 125
 Val Gly Asp Asp Glu Asp Tyr Val Arg Ser Ala Ile Lys Gly Gly Phe
 130 135 140
 Gln Glu Leu Gly Phe Ser Asp His Gly Pro Trp Lys Tyr His Thr Asp
 145 150 155 160
 Phe Val Ser Asp Ile Arg Met Leu Pro Glu Asp Leu Pro Glu Tyr Ile
 165 170 175
 Glu Ser Ile Arg Ala Leu Lys Glu Lys Tyr Arg Asn Gln Ile Ser Ile
 180 185 190
 Lys Ile Gly Leu Glu Tyr Glu Tyr Phe Pro Glu Tyr Ile His Trp Leu
 195 200 205
 Lys Glu Ile Ile Lys Glu Tyr Arg Leu Asp Tyr Ile Leu Phe Gly Asn
 210 215 220
 His His Tyr His Thr Asp Glu Lys Phe Pro Tyr Phe Gly His His Thr
 225 230 235 240
 Thr Asn Arg Asp Met Leu Asp Leu Tyr Glu Glu Ser Thr Ile Glu Gly
 245 250 255
 Met Glu Ser Gly Leu Phe Ala Tyr Leu Ala His Pro Asp Leu Phe Met
 260 265 270
 Arg Ser Tyr Pro Glu Phe Asp Lys His Cys Ile Ser Val Ser Arg His
 275 280 285
 Ile Cys Arg Ala Ala Ala Arg Leu His Ile Pro Leu Glu Tyr Asn Ile
 290 295 300
 Gly Tyr Val Ala Ile Asn Glu Ala Arg Gly Ile Thr Thr Tyr Pro Cys
 305 310 315 320
 Pro Gln Phe Trp His Ile Ala Ala Asn Glu Gly Cys Thr Ala Ile Ile
 325 330 335

3629 7179 375 PRT B.fragilis

Gly Leu Asp Ala His Asn Asn Leu Asp Leu Glu Asn Pro Thr Tyr Tyr
 340 345 350
 Asp Arg Ala Cys Gln Glu Leu Asn Ala Leu Lys Met Pro Val Ile Asp
 355 360 365
 Thr Ile Pro Phe Leu Lys Tyr
 370 375

<210> 7180
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 7180
 Ile Met Ala Thr Ala Tyr His Asn Leu Ser Asp Tyr Asp Phe Asn Ser
 1 5 10 15
 Val Pro Asn Ala Glu Glu Met Lys Phe Gly Ile Val Val Ser Glu Trp
 20 25 30
 Asn Ala Asn Ile Thr Gly Ala Leu Leu Asp Gly Ala Val Lys Thr Leu
 35 40 45
 Lys Lys His Gly Ala Lys Glu Asn Ile Leu Val Lys Thr Val Pro
 50 55 60
 Gly Ser Phe Glu Leu Thr Phe Gly Ala Asn Gln Met Met Glu Asn Ser
 65 70 75 80
 Asp Ile Asp Ala Ile Ile Ile Ile Gly Cys Val Ile Lys Gly Asp Thr
 85 90 95
 Pro His Phe Asp Tyr Val Cys Met Gly Val Thr Gln Gly Val Ala Gln
 100 105 110
 Leu Asn Ala Thr Gly Asp Ile Pro Val Ile Tyr Gly Leu Ile Thr Thr
 115 120 125
 Asn Thr Met Glu Gln Ala Glu Asp Arg Ala Gly Gly Lys Leu Gly Asn
 130 135 140
 Lys Gly Asp Glu Cys Ala Ile Thr Ala Ile Lys Met Ile Asp Phe Val
 145 150 155 160
 Trp Ser Leu Asn Lys
 165

<210> 7181
 <211> 395
 <212> PRT
 <213> B.fragilis

<400> 7181
 Arg His Leu Phe Leu Phe Cys Asp Leu Lys Pro Arg Lys Ser Phe Tyr
 1 5 10 15
 Phe Cys Asn Gln Thr Gln Cys Ala His Met Ile Leu Lys Arg Ile Ser
 20 25 30
 Ile Leu Asn Tyr Lys Asn Leu Glu Gln Val Glu Leu Asn Phe Ser Ala
 35 40 45
 Lys Leu Asn Cys Phe Phe Gly Gln Asn Gly Met Gly Lys Thr Asn Leu
 50 55 60
 Leu Asp Ala Val Tyr Phe Leu Ser Phe Cys Lys Ser Ala Gly Asn Pro
 65 70 75 80
 Ile Asp Ser Gln Asn Ile Arg His Glu Gln Asp Phe Phe Val Ile Gln
 85 90 95
 Gly Phe Tyr Glu Ala Met Asp Gly Thr Pro Glu Glu Ile Tyr Cys Gly
 100 105 110
 Met Lys Arg Arg Ser Lys Lys Gln Phe Lys Arg Asn Lys Lys Glu Tyr
 115 120 125
 Ser Arg Leu Ser Asp His Ile Gly Phe Ile Pro Leu Val Met Val Ser

130 135 140
 Pro Ala Asp Ser Glu Leu Ile Ala Gly Gly Ser Asp Glu Arg Arg Arg
 145 150 155 160
 Phe Met Asp Val Val Ile Ser Gln Tyr Asp Lys Glu Tyr Leu Asp Ala
 165 170 175
 Leu Ile Arg Tyr Asn Lys Ala Leu Val Gln Arg Asn Thr Leu Leu Lys
 180 185 190
 Ser Glu Gln Pro Ile Glu Glu Glu Leu Phe Leu Val Trp Glu Glu Met
 195 200 205
 Met Ala Gln Ala Gly Glu Val Val Phe Arg Lys Arg Glu Ala Phe Ile
 210 215 220
 Ser Glu Phe Ile Pro Ile Phe Gln Ser Phe Tyr Ser Tyr Ile Ser Gln
 225 230 235 240
 Asp Lys Glu Gln Val Gly Leu Thr Tyr Glu Ser His Ala Arg Asn Ala
 245 250 255
 Ser Leu Leu Glu Val Leu Lys Glu Ser Arg Val Arg Asp Lys Ile Met
 260 265 270
 Gly Tyr Ser Leu Arg Gly Ile His Lys Asp Glu Leu Asn Met Leu Leu
 275 280 285
 Gly Asp Phe Pro Ile Lys Arg Glu Gly Ser Gln Gly Gln Asn Lys Thr
 290 295 300
 Tyr Leu Val Ala Leu Lys Leu Ala Gln Phe Asp Phe Leu Lys Arg Thr
 305 310 315 320
 Gly Ser Thr Val Pro Leu Leu Leu Leu Asp Asp Ile Phe Asp Lys Leu
 325 330 335
 Asp Ala Ser Arg Val Glu Gln Ile Val Lys Leu Val Ala Gly Asp Asn
 340 345 350
 Phe Gly Gln Ile Phe Ile Thr Asp Thr Asn Arg Glu His Leu Asp Arg
 355 360 365
 Ile Leu Tyr Lys Val Gly Ser Asp Tyr Lys Met Phe Arg Val Glu Ser
 370 375 380
 Gly Ala Ile Asn Glu Met Glu Glu Lys Glu Arg
 385 390 395

<210> 7182

<211> 366

<212> PRT

<213> B.fragilis

<400> 7182

Lys His Phe Leu Thr Phe Ala Pro His Ser Asn Glu Thr Asn Ala Asn
 1 5 10 15
 Leu Glu Lys Tyr Leu Asn Lys Tyr Tyr Lys Thr Leu Lys Ser Leu Asn
 20 25 30
 Lys Met Ile Lys Val Gly Ile Asn Gly Phe Gly Arg Ile Gly Arg Met
 35 40 45
 Val Phe Arg Ala Ala Val Lys Asn Phe Gly Asn Asp Ile Gln Ile Val
 50 55 60
 Gly Ile Asn Asp Leu Leu Asp Ala Glu Tyr Leu Ala Tyr Met Leu Lys
 65 70 75 80
 Tyr Asp Ser Val His Gly Arg Phe Glu Gly Glu Val Ala Val Glu Asp
 85 90 95
 Gly Ala Leu Ile Val Asn Gly Asn Lys Ile Arg Leu Thr Ala Glu Met
 100 105 110
 Asp Pro Ala Asn Leu Lys Trp Asn Glu Val Asp Ala Asp Val Val Val
 115 120 125
 Glu Ser Thr Gly Phe Phe Leu Thr Asp Glu Thr Ala Arg Lys His Ile
 130 135 140
 Gln Ala Gly Ala Lys Lys Val Ile Met Ser Ala Pro Ser Lys Asp Ser

145 150 155 160
 Thr Pro Met Phe Val Tyr Gly Val Asn His Thr Ser Tyr Ala Gly Gln
 165 170 175
 Asp Ile Ile Ser Asn Ala Ser Cys Thr Thr Asn Cys Leu Ala Pro Ile
 180 185 190
 Ala Lys Val Leu Asn Asp Lys Phe Gly Ile Val Lys Gly Leu Met Thr
 195 200 205
 Thr Val His Ala Ala Thr Ala Thr Gln Lys Thr Val Asp Gly Pro Ser
 210 215 220
 Lys Lys Asp Trp Arg Gly Gly Arg Gly Ile Leu Glu Asn Ile Ile Pro
 225 230 235 240
 Ser Ser Thr Gly Ala Ala Lys Ala Val Gly Lys Val Leu Pro Val Leu
 245 250 255
 Asn Gly Lys Leu Thr Gly Met Ala Phe Arg Val Pro Thr Ser Asp Val
 260 265 270
 Ser Val Val Asp Leu Thr Val Val Leu Glu Lys Ala Ala Thr Met Ala
 275 280 285
 Glu Ile Asn Ala Ala Met Lys Glu Ala Ser Glu Gly Glu Leu Lys Gly
 290 295 300
 Ile Leu Gly Tyr Thr Glu Asp Ala Val Val Ser Thr Asp Phe Arg Gly
 305 310 315 320
 Cys Ala Asn Thr Ser Ile Tyr Asp Ser Lys Ala Gly Ile Ser Leu Asp
 325 330 335
 Ser Asn Phe Ala Lys Val Val Ser Trp Tyr Asp Asn Glu Trp Gly Tyr
 340 345 350
 Ser Asn Lys Val Cys Glu Met Ala Arg Val Ile Ala Ala Lys
 355 360 365

<210> 7183
 <211> 517
 <212> PRT
 <213> B.fragilis

<400> 7183
 Phe Cys Ala Lys Phe Ile Thr Tyr Leu Tyr Met Gln Glu Lys Ile Ile
 1 5 10 15
 Ile Leu Asp Phe Gly Ser Gln Thr Thr Gln Leu Ile Gly Arg Arg Val
 20 25 30
 Arg Glu Leu Asp Thr Tyr Cys Glu Ile Val Pro Tyr Asn Lys Phe Pro
 35 40 45
 Lys Gly Asp Glu Thr Val Lys Gly Val Ile Leu Ser Gly Ser Pro Phe
 50 55 60
 Ser Val Tyr Asp Glu Ser Ala Phe Lys Val Asp Leu Ser Glu Ile Arg
 65 70 75 80
 Gly Lys Tyr Pro Ile Leu Gly Ile Cys Tyr Gly Ala Gln Phe Met Ala
 85 90 95
 Tyr Thr Asn Gly Gly Lys Val Glu Pro Ala Gly Thr Arg Glu Tyr Gly
 100 105 110
 Arg Ala His Leu Thr Ser Phe Cys Lys Asp Asn Val Leu Phe Lys Gly
 115 120 125
 Val Arg Glu Gly Thr Gln Val Trp Met Ser His Gly Asp Thr Ile Thr
 130 135 140
 Ala Ile Pro Glu Asn Phe Lys Thr Ile Ala Ser Thr Asp Lys Val Ala
 145 150 155 160
 Ile Ala Ala Tyr Gln Val Glu Gly Glu Gln Val Trp Gly Val Gln Phe
 165 170 175
 His Pro Glu Val Phe His Ser Glu Asp Gly Thr Gln Met Leu Arg Asn
 180 185 190
 Phe Val Val Asp Val Cys Gly Cys Lys Gln Asp Trp Ser Pro Ala Ser

195 200 205
 Phe Ile Glu Ser Thr Val Ala Glu Leu Lys Ala Gln Leu Gly Asp Asp
 210 215 220
 Lys Val Val Leu Gly Leu Ser Gly Gly Val Asp Ser Ser Val Ala Ala
 225 230 235 240
 Val Leu Leu Asn Arg Ala Ile Gly Lys Asn Leu Thr Cys Ile Phe Val
 245 250 255
 Asp His Gly Met Leu Arg Lys Asn Glu Phe Lys Asn Val Met His Asp
 260 265 270
 Tyr Glu Cys Leu Gly Leu Asn Val Ile Gly Val Asp Ala Ser Glu Lys
 275 280 285
 Phe Phe Ser Glu Leu Glu Gly Val Thr Glu Pro Glu Arg Lys Arg Lys
 290 295 300
 Ile Ile Gly Lys Gly Phe Ile Asp Val Phe Asp Glu Glu Ala His Lys
 305 310 315 320
 Leu Lys Asp Val Lys Trp Leu Ala Gln Gly Thr Ile Tyr Pro Asp Cys
 325 330 335
 Ile Glu Ser Leu Ser Ile Thr Gly Thr Val Ile Lys Ser His His Asn
 340 345 350
 Val Gly Gly Leu Pro Glu Lys Met Asn Leu Lys Leu Cys Glu Pro Leu
 355 360 365
 Arg Leu Leu Phe Lys Asp Glu Val Arg Arg Val Gly Arg Glu Leu Gly
 370 375 380
 Met Pro Glu His Leu Ile Thr Arg His Pro Phe Pro Gly Pro Gly Leu
 385 390 395 400
 Ala Val Arg Ile Leu Gly Asp Ile Thr Pro Glu Lys Val Arg Ile Leu
 405 410 415
 Gln Asp Ala Asp Asp Ile Phe Ile Gln Gly Leu Arg Asp Trp Gly Leu
 420 425 430
 Tyr Asp Gln Val Trp Gln Ala Gly Val Ile Leu Leu Pro Val Gln Ser
 435 440 445
 Val Gly Val Met Gly Asp Glu Arg Thr Tyr Glu Arg Ala Val Ala Leu
 450 455 460
 Arg Ala Val Thr Ser Thr Asp Ala Met Thr Ala Asp Trp Ala His Leu
 465 470 475 480
 Pro Tyr Glu Phe Leu Gly Lys Val Ser Asn Asp Ile Ile Asn Lys Val
 485 490 495
 Lys Gly Val Asn Arg Val Thr Tyr Asp Ile Ser Ser Lys Pro Pro Ala
 500 505 510
 Thr Ile Glu Trp Glu
 515

<210> 7184

<211> 236

<212> PRT

<213> B.fragilis

<400> 7184

Lys Asn Asn Lys Lys Asn His Ile Lys Met Ala Glu Gln Lys Asn His
 1 5 10 15
 Asn Asn Glu Leu Asn Val Glu Asp Ala Leu Thr Gln Ser Glu Ala Phe
 20 25 30
 Leu Val Lys Asn Lys Lys Ala Ile Gly Ala Val Val Ala Val Ile
 35 40 45
 Val Ile Val Ala Gly Ala Ile Leu Tyr Lys Asn Phe Tyr Ala Glu Pro
 50 55 60
 Arg Glu Glu Lys Ala Gln Ala Ala Leu Phe Lys Ser Glu Gln Tyr Phe
 65 70 75 80
 Glu Gln Ser Ala Tyr Glu Gln Ala Leu Asn Gly Asp Ser Ile Gly Ser

	85		90		95
Ile Gly Phe Leu Lys Val Ala Asp Gln Phe Ser Gly Thr Lys Ala Ala					
	100		105		110
Asn Leu Ala Lys Ala Tyr Ala Gly Ile Cys Tyr Gln Asn Leu Gly Lys					
	115		120		125
Tyr Glu Glu Ala Ile Lys Ala Leu Asp Gly Phe Ser Gly Asp Asp Gln					
	130		135		140
Met Val Ala Pro Ala Ile Gln Gly Ala Ile Gly Asn Cys Tyr Ala Gln					
	145		150		155
Leu Gly Gln Leu Asp Lys Ala Thr Ser Ala Leu Leu Lys Ala Ala Asp					
	165		170		175
His Ala Asp Asn Ser Thr Leu Ser Pro Ile Phe Leu Leu Gln Ala Gly					
	180		185		190
Glu Ile Leu Met Lys Gln Gly Lys Asn Glu Glu Ala Val Lys Ala Phe					
	195		200		205
Thr Lys Ile Lys Asp Lys Tyr Phe Gln Ser Tyr Gln Ala Met Asp Ile					
	210		215		220
Asp Lys Tyr Ile Glu Gln Ala Lys Leu Leu Lys Lys					
	225		230		235

<210> 7185

<211> 62

<212> PRT

<213> B.fragilis

<400> 7185

Asn Leu Cys Leu Ile Ala Tyr Ile Cys Leu Phe Val Glu Tyr Phe Gly					
1	5		10		15
Ile Asn Val Val Phe Lys Val Tyr Ile Tyr Ser Leu Phe Asn Thr Lys					
	20		25		30
Ile Phe Tyr Tyr Glu Ser Phe Asn Leu Arg Ser Leu Pro Tyr Trp Gly					
	35		40		45
Tyr Val Arg Leu Val Met Phe Arg Pro Tyr Cys Arg Phe Val					
	50		55		60

<210> 7186

<211> 716

<212> PRT

<213> B.fragilis

<400> 7186

Asp Thr Leu Asn Lys Lys Lys Thr Val Arg Lys Ser Val Ile Leu Cys					
1	5		10		15
Gly Glu Ile Cys Asn Phe Val Asn Val Thr Leu Ile Leu Leu Asn Met					
	20		25		30
Thr Asn Ile Ala Asn Ala Gln Asn Pro Phe Phe Glu Lys Tyr Thr Thr					
	35		40		45
Pro Tyr Gly Thr Val Pro Phe Asp Lys Ile Lys Asn Glu His Tyr Glu					
	50		55		60
Pro Ala Ile Arg Glu Gly Ile Ser Arg Gln Ala Glu Ile Asp Ala					
	65		70		75
Ile Val Asn Asn Pro Glu Ala Pro Thr Phe Ala Asn Thr Ile Leu Ala					
	85		90		95
Tyr Glu Lys Ser Gly Glu Leu Leu Asp Arg Val Thr Thr Val Phe Gly					
	100		105		110
Asn Leu Arg Ser Ala Glu Thr Asn Asp Asp Leu Gln Lys Ile Ala Gln					
	115		120		125
Glu Met Ile Pro Leu Leu Ser Glu His Ser Asn Asn Ile Ser Leu Asn					
	130		135		140

Gln Glu Leu Phe Glu Arg Ile Lys Val Val Tyr Gly Gln Lys Asp Ser
 145 150 155 160
 Ile Glu Leu Thr Pro Glu Gln Thr Lys Leu Leu Glu Asn Ala Tyr Asn
 165 170 175
 Gly Phe Ile Arg Arg Gly Ala Asn Leu Gln Gly Glu Ala Lys Glu Lys
 180 185 190
 Tyr Arg Glu Leu Thr Lys Asn Leu Ser Lys Leu Thr Leu Asp Phe Ser
 195 200 205
 Glu Asn Asn Leu Lys Glu Thr Asn Asn Tyr Gln Leu Thr Leu Thr Asp
 210 215 220
 Glu Ala Gln Leu Ala Gly Leu Pro Glu Ser Ala Ile Glu Ala Ala Ala
 225 230 235 240
 Glu Thr Ala Arg Glu Lys Gly Val Asn Gly Trp Val Phe Thr Leu His
 245 250 255
 Ala Pro Ser Tyr Ile Pro Phe Met Thr Tyr Ala Asp Asn Arg Asp Leu
 260 265 270
 Arg Arg Glu Leu Tyr Met Ala Tyr Asn Thr Lys Cys Thr His Asp Asn
 275 280 285
 Glu Tyr Asn Asn Leu Glu Ile Val Lys Lys Ile Ala Asn Ile His Met
 290 295 300
 Glu Ile Ala Gln Leu Leu Gly Tyr Asp Asn Tyr Ala Glu Tyr Thr Leu
 305 310 315 320
 Lys Glu Arg Met Ala Glu Thr Gly Asp Ala Val Tyr Lys Leu Leu Asn
 325 330 335
 Gln Leu Leu Asp Ala Tyr Thr Pro Thr Ala His Lys Glu Tyr Glu Ala
 340 345 350
 Val Gln Glu Leu Ala Arg Thr Glu Gln Gly Asp Ala Phe Glu Val Met
 355 360 365
 Pro Trp Asp Trp Ser Tyr Tyr Ser Asn Lys Leu Lys Asp Arg Gln Phe
 370 375 380
 Asn Ile Asn Glu Glu Met Leu Arg Pro Tyr Phe Glu Leu Ser Lys Val
 385 390 395 400
 Lys Ala Gly Val Phe Gly Leu Ala Thr Lys Leu Tyr Gly Ile Thr Phe
 405 410 415
 His Lys Asn Pro Asp Ile Pro Val Tyr His Lys Asp Val Asp Ala Tyr
 420 425 430
 Glu Val Leu Asp Lys Asp Gly Ser Phe Leu Ala Val Leu Tyr Thr Asp
 435 440 445
 Phe His Pro Arg Glu Gly Lys Arg Ser Gly Ala Trp Met Thr Glu Phe
 450 455 460
 Lys Gly Gln Trp Ile Glu Asp Thr Gly Glu Asn Ser Arg Pro His Val
 465 470 475 480
 Ser Val Val Met Asn Phe Thr Lys Pro Thr Glu Ser Lys Pro Ala Leu
 485 490 495
 Leu Thr Tyr Asp Glu Val Glu Thr Phe Leu His Glu Phe Gly His Ala
 500 505 510
 Leu His Gly Met Phe Ala Asn Ser Thr Tyr Gln Ser Leu Ser Gly Thr
 515 520 525
 Asn Val Tyr Trp Asp Phe Val Glu Leu Pro Ser Gln Ile Met Glu Asn
 530 535 540
 Phe Gly Ile Glu Lys Glu Phe Leu His Thr Phe Ala Asn His Tyr Gln
 545 550 555 560
 Thr Gly Glu Pro Leu Pro Asp Glu Leu Ile Ser Arg Leu Val Asp Ala
 565 570 575
 Ser Asn Phe Asn Val Ala Tyr Ala Cys Leu Arg Gln Val Ser Phe Gly
 580 585 590
 Leu Leu Asp Met Ala Trp Tyr Thr Arg Asn Thr Pro Phe Glu Gly Asp
 595 600 605
 Val Lys Ala Tyr Glu Arg Gln Ala Trp Ala Gln Ala Gln Ile Leu Pro

610	615	620
Thr Val Ser Glu Thr Cys Met Ser Thr Gln Phe Ser His Ile Phe Ala		
625	630	635
Gly Gly Tyr Ser Ala Gly Tyr Tyr Ser Tyr Lys Trp Ala Glu Val Leu		640
	645	650
Asp Ala Asp Ala Phe Ser Leu Phe Lys Gln Lys Gly Ile Phe Asn Glu		655
	660	665
Glu Val Ala Asn Ser Phe Arg Asn Asn Ile Leu Ser Lys Gly Gly Thr		670
	675	680
Glu His Pro Met Ile Leu Tyr Lys Arg Phe Arg Gly Gln Glu Pro Thr		685
	690	695
Ile Asp Ala Leu Leu Ile Arg Asn Gly Ile Lys Lys		700
705	710	715

<210> 7187
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 7187
Leu Leu Glu Lys Ser Ile Tyr Gly Asn Ile Ile Tyr Asn Met Leu Glu
1 5 10 15
Lys Glu Ala Tyr Ile Gln Tyr Phe Asn Gln Ser Asp Gln Thr Val Lys
20 25 30
Lys Thr Val Glu Leu Leu Glu Ser Glu Lys Ala Phe Leu Lys Ala Pro
35 40 45
Val Ser Val Glu Pro Gln Lys Glu Glu Lys Lys Asp Gly Lys Lys Lys
50 55 60
Thr Thr Ala Gln Val Asp Ser Thr Gly Glu Glu Glu Ile Leu Arg Leu
65 70 75 80
Tyr Ala

<210> 7188
 <211> 102
 <212> PRT
 <213> B.fragilis

<400> 7188
Asn Gly Gly Lys Arg Glu Met Lys Arg Asn Asp Ala Glu Pro Ile Gly
1 5 10 15
Lys Leu Ile Gln Lys Tyr Leu Arg Gln Glu Ser Leu Glu Ser Pro Leu
20 25 30
Asn Glu Gln Arg Leu Leu Asp Ser Trp Glu Thr Val Leu Gly Pro Thr
35 40 45
Ile Met Ser Tyr Thr Arg Asp Leu Tyr Ile Arg Asn Gln Val Leu Tyr
50 55 60
Val His Leu Thr Ser Ala Ala Leu Arg Gln Glu Leu Met Met Gly Arg
65 70 75 80
Glu Leu Leu Val Arg Asn Leu Asn Gln Lys Val Gly Ala Thr Val Ile
85 90 95
Thr Asn Ile Ile Phe Arg
100

<210> 7189
 <211> 427
 <212> PRT
 <213> B.fragilis

<400> 7189

Leu His Met Lys Thr Pro Ser Gln Thr His Val Leu Gly Leu Ala His
 1 5 10 15
 Pro Pro Leu Pro Met Val Arg Leu Ala Phe Ile Gly Leu Gly Asn Arg
 20 25 30
 Gly Val Leu Thr Leu Gln Arg Tyr Leu Gln Ile Glu Gly Val Glu Ile
 35 40 45
 Lys Ala Leu Cys Glu Ile Arg Glu Gly Asn Leu Val Lys Ala Gln Lys
 50 55 60
 Ile Leu Arg Glu Ala Gly Tyr Pro Gln Pro Asp Gly Tyr Thr Gly Pro
 65 70 75 80
 Asp Gly Trp Lys Arg Met Cys Glu Arg Asp Asp Ile Asp Leu Val Phe
 85 90 95
 Ile Cys Thr Asp Trp Leu Thr His Thr Pro Met Ala Val Tyr Ser Met
 100 105 110
 Glu His Gly Lys His Val Ala Ile Glu Val Pro Ala Ala Met Thr Val
 115 120 125
 Glu Glu Cys Trp Lys Leu Val Asp Thr Ala Glu Lys Thr Arg Gln His
 130 135 140
 Cys Met Met Leu Glu Asn Cys Cys Tyr Asp Pro Phe Ala Leu Thr Thr
 145 150 155 160
 Leu Asn Met Ala Gln Gln Gly Val Phe Gly Glu Ile Thr His Val Glu
 165 170 175
 Gly Ala Tyr Ile His Asp Leu Arg Ser Ile Tyr Phe Ala Asp Glu Ser
 180 185 190
 Lys Gly Gly Phe His Asn His Trp Gly Lys Lys Tyr Ser Ile Glu His
 195 200 205
 Thr Gly Asn Pro Tyr Pro Thr His Gly Leu Gly Pro Val Cys Gln Ile
 210 215 220
 Leu Asn Ile His Arg Gly Asp Arg Met Asn Tyr Leu Val Ser Leu Ser
 225 230 235 240
 Ser Leu Gln Ala Gly Met Thr Glu Tyr Ala Arg Lys Asn Phe Gly Ala
 245 250 255
 Asp Ser Pro Glu Ala Arg Gln Lys Tyr Leu Leu Gly Asp Met Asn Thr
 260 265 270
 Thr Leu Ile Gln Thr Val Lys Gly Lys Ser Ile Met Ile Gln Tyr Asn
 275 280 285
 Val Val Thr Pro Arg Pro Tyr Ser Arg Leu His Thr Val Cys Gly Thr
 290 295 300
 Lys Gly Phe Ala Gln Lys Tyr Pro Val Pro Ser Ile Ala Leu Glu Pro
 305 310 315 320
 Asp Ala Gly Ser Pro Leu Glu Gly Lys Ala Leu Glu Glu Ile Met Glu
 325 330 335
 Arg Tyr Lys His Pro Phe Thr Ala Thr Phe Gly Thr Glu Ala His Arg
 340 345 350
 Arg Asn Leu Pro Asn Glu Met Asn Tyr Val Met Asp Cys Arg Leu Ile
 355 360 365
 Tyr Cys Leu Arg Asn Gly Leu Pro Leu Asp Met Asp Val Tyr Asp Ala
 370 375 380
 Ala Glu Trp Ser Cys Ile Thr Glu Leu Ser Glu Gln Ser Val Leu Asn
 385 390 395 400
 Gly Ser Ile Pro Val Glu Ile Pro Asp Phe Thr Arg Gly Ala Trp Lys
 405 410 415
 Lys Cys His Ile Ser Arg Thr Ser Asp Leu Tyr
 420 425

<210> 7190

<211> 171

<212> PRT

<213> B.fragilis

<400> 7190

Lys Lys Met Lys Tyr Lys Tyr Leu Leu Leu Leu Leu Leu Met Leu Pro
 1 5 10 15
 Phe Val Ser Gly Cys Asn Asp Ser Asp Asp Val Asn Gly Ile Phe Thr
 20 25 30
 Gly Lys Val Trp Lys Leu Thr Tyr Ile Thr Lys Lys Asn Glu His Lys
 35 40 45
 Pro Tyr Asp Phe Trp Gly Asp Lys Asp Lys Tyr Glu Gln Ser Ile Lys
 50 55 60
 Asn Tyr Ile Asn Lys Glu Gly Ala Tyr Thr Ile Lys Phe Glu Gly Glu
 65 70 75 80
 Thr Thr Asp Asn Val Ile Ser Gly Lys Phe Ser Gly Thr Leu Leu Ser
 85 90 95
 His Ser Tyr Thr Gly Thr Trp Ser Ala Asn Gly Glu Ser Asn Ala Phe
 100 105 110
 Ser Ala Ser Val Lys Gly Ser Glu Asn Asp Pro Leu Gly Phe Ser Asn
 115 120 125
 Lys Phe Val Glu Gly Leu Asn Arg Ala Thr Ser Tyr Lys Gly Asn Tyr
 130 135 140
 Asp Asn Leu Phe Ile Tyr Tyr Lys Asp Glu Gly Gly Arg Glu Leu Cys
 145 150 155 160
 Leu Val Phe His Val Asp Lys Asp Asn Asn Lys
 165 170

<210> 7191

<211> 147

<212> PRT

<213> B.fragilis

<400> 7191

Gln Arg Met Asp Thr Ala Asn Ser Lys Gln Ser Asp Leu Asp Lys Arg
 1 5 10 15
 Tyr Ile Arg Met Ala Ser Ile Trp Ser Glu Asn Ser Tyr Cys Gln Arg
 20 25 30
 Arg Lys Val Gly Ala Leu Ile Val Lys Asp Lys Met Ile Ile Ser Asp
 35 40 45
 Gly Tyr Asn Gly Thr Pro Ser Gly Phe Glu Asn Val Cys Glu Asp Asp
 50 55 60
 Asn Asn Val Thr Lys Pro Tyr Val Leu His Ala Glu Ala Asn Ala Ile
 65 70 75 80
 Thr Lys Ile Ala Arg Ser Asn Asn Ser Ser Asp Gly Ala Thr Met Tyr
 85 90 95
 Val Thr Ala Ser Pro Cys Ile Glu Cys Ala Lys Leu Ile Ile Gln Ala
 100 105 110
 Gly Ile Lys Arg Val Val Tyr Ser Glu His Tyr Arg Leu Glu Asp Gly
 115 120 125
 Ile Glu Leu Leu Gln Arg Ala Gly Ile Glu Val Val Phe Val Asp Thr
 130 135 140
 Ser Glu Lys
 145

<210> 7192

<211> 675

<212> PRT

<213> B.fragilis

<400> 7192

Thr Met Arg Leu Lys Leu Lys His Ile Tyr Phe Cys Ser Leu Ile Ala
 1 5 10 15
 Met Gly Gly Leu Ala Ile Thr Ser Cys Glu Asp Phe Leu Asp Arg Ser
 20 25 30
 Pro Ile Ser Gln Val Thr Pro Glu Lys Tyr Phe Ser Thr Val Asp Gln
 35 40 45
 Val Ala Asn Tyr Leu Asn Asn Tyr Tyr Asn Asp Tyr Leu Asp Asp Ser
 50 55 60
 Arg Asn Tyr Lys Leu Tyr His Gln Gln Ala Trp Asn Ser Gly Met Gln
 65 70 75 80
 Arg Asn Asp Ala Asn Thr Asp Asn Leu Leu Ala Asp Asp Ser Ser Leu
 85 90 95
 Asp Tyr Phe Ala Gly Asn Trp Gln Val Gly Ser Gly Lys Ser Ile Gln
 100 105 110
 Ala Pro Leu Asn Arg Ile Arg Thr Trp Asn Tyr Leu Leu Glu Gln Val
 115 120 125
 Leu Pro Lys Glu Lys Glu Gly Ser Ile Gln Gly Ser Val Glu Asp Leu
 130 135 140
 Lys His Tyr Ile Gly Glu Ala Tyr Phe Phe Arg Ala Met Ala Tyr Tyr
 145 150 155 160
 Lys Ala Leu Val Lys Tyr Gly Asp Tyr Pro Ile Val Asp Lys Val Leu
 165 170 175
 Pro Asp Gln Glu Ile Leu Leu Glu Tyr Ser Thr Arg Ala Pro Arg
 180 185 190
 Asn Glu Val Ala Arg Gln Ile Leu Lys Asp Leu Asp Glu Ala Ile Asn
 195 200 205
 Arg Met His Asp Gln Gly Phe Gln Asn Asn Gln Arg Ile Asn Lys Gln
 210 215 220
 Val Ala Gln Leu Tyr Lys Ser Arg Val Ala Leu Phe Glu Ala Thr Phe
 225 230 235 240
 Glu Lys Tyr His Arg Gly Thr Gly Arg Val Pro Gly Asp Glu Ser Trp
 245 250 255
 Pro Gly Ala Lys Met Ser Tyr Asn Ser Gly Lys Thr Phe Asn Ile Asp
 260 265 270
 Gly Glu Ile Asp Phe Phe Leu Thr Glu Ala Met Asn Ala Ala Ala Ala
 275 280 285
 Val Ala Asp His Cys Thr Leu Thr Glu Asn Ser His Val Leu Asn Pro
 290 295 300
 Glu Tyr Gly Gln Ile Tyr Asn Trp Asn Pro Tyr Tyr Glu Met Phe Ser
 305 310 315 320
 Thr Pro Asp Ala Ser Gly Tyr Ser Glu Val Leu Leu Trp Lys Gln Tyr
 325 330 335
 Asp Lys Ser Leu Asn Val Ser His Cys Ala Pro Ala Arg Leu Gln Asn
 340 345 350
 Gly Asp Arg Thr Gly Leu Thr Arg Gly Phe Ile Thr Thr Phe Leu Met
 355 360 365
 Lys Ser Gly Leu Pro Ile Tyr Ala Ala Gly Asn Glu Tyr His Gly Asp
 370 375 380
 Val Ser Ile Ser Asp Glu Lys Glu Asn Arg Asp Glu Arg Leu Gln Leu
 385 390 395 400
 Phe Val Trp Gly Glu Lys Asp Val Leu His Ser Asp Thr Lys Asn Pro
 405 410 415
 Ala Val Ala Ala Gly Thr Thr Leu Leu Phe Gly Val Pro Asn Ile
 420 425 430
 Ile Ser Glu Gln Lys Gln Thr Gln Asp Leu Thr Gly Tyr Arg Pro Arg
 435 440 445
 Lys Ala His Thr Tyr Asp Tyr Ala Gln Thr Lys Gly Asp Glu Leu Leu
 450 455 460
 Gly Thr Asn Ala Cys Val Val Phe Arg Ser Ala Glu Ala Asn Leu Asn

465 470 475 480
 Tyr Met Glu Ala Cys Tyr Glu Lys Thr Gly Ser Leu Asp Ala Lys Ala
 485 490 495
 Gln Lys Tyr Trp Lys Ala Leu Arg Thr Arg Ala Gly Val Asp Asp Asp
 500 505 510
 Tyr Ala Lys Thr Ile Ala Ala Thr Asp Leu Ser Lys Glu Asn Asp Leu
 515 520 525
 Ala Val Tyr Ser Gly Ser Lys Met Val Asp Val Thr Leu Tyr Asn Ile
 530 535 540
 Arg Arg Glu Arg Arg Cys Glu Phe Ile Gly Glu Gly Met Arg Trp Asp
 545 550 555 560
 Asp Leu Lys Arg Trp Arg Ser Trp Asp Gln Leu Leu Thr Lys Pro Tyr
 565 570 575
 Ile Ile Glu Gly Ile Asn Phe Trp Asp Ala Ala Tyr Lys Asp His Lys
 580 585 590
 Asp Ile Lys Asp Asp Gly Thr Leu Asp Ala Asn Val Ser Pro Lys Ser
 595 600 605
 Asp Ser Lys Tyr Leu Arg Pro Leu Arg Arg Thr Ser Ile Asn Asn Glu
 610 615 620
 Leu Tyr Asp Gly Leu Thr Trp Arg Lys Ala Phe Tyr Leu Asp Pro Ile
 625 630 635 640
 Gly Ile Glu Asp Met Ser Leu Thr Ala Thr Asn Pro Glu Asp Ile Asn
 645 650 655
 Thr Thr Gln Leu Tyr Gln Asn Pro Tyr Trp Pro Met Thr Ala Gly Lys
 660 665 670
 Ala Leu Glu
 675

<210> 7193

<211> 184

<212> PRT

<213> B.fragilis

<400> 7193

Asn Leu Lys Arg Arg Lys Arg Lys Met Glu Arg Lys Lys Gln Leu Arg
 1 5 10 15
 Lys Trp Ile Ala Gln Glu Lys Lys Lys Tyr Ser Asp Ser Thr Leu Lys
 20 25 30
 Ser Leu Ser Glu Lys Val Leu Ile Thr Leu Glu Ala Cys Pro Glu Phe
 35 40 45
 Gln Lys Gly His Thr Ile Leu Leu Tyr His Ser Met Lys Asp Glu Val
 50 55 60
 Gln Thr His Ala Phe Ile Glu Lys Trp Ser Arg Ser Lys Arg Ile Ile
 65 70 75 80
 Leu Pro Val Val Thr Gly Asp Glu Leu Glu Leu Arg Val Tyr Thr Gly
 85 90 95
 Pro Gln Asp Leu Ala Ile Gly Ser Tyr Gly Ile Ala Glu Pro Thr Gly
 100 105 110
 Ala Pro Phe Thr Asp Tyr Gly Thr Ile Asp Leu Ala Val Ile Pro Gly
 115 120 125
 Val Ala Phe Asp Arg Tyr Gly His Arg Leu Gly Arg Gly Lys Gly Tyr
 130 135 140
 Tyr Asp Arg Leu Leu Pro Gln Ile Pro Ala Pro Lys Val Gly Ile Cys
 145 150 155 160
 Phe Pro Phe Gln Leu Ile Glu Glu Val Pro Ala Glu Ala Phe Asp Phe
 165 170 175
 Arg Met Asp Thr Ile Ile Ala Gln
 180

1990-1991	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	2042-2043	2043-2044	2044-2045	2045-2046	2046-2047	2047-2048	2048-2049	2049-2050	2050-2051	2051-2052	2052-2053	2053-2054	2054-2055	2055-2056	2056-2057	2057-2058	2058-2059	2059-2060	2060-2061	2061-2062	2062-2063	2063-2064	2064-2065	2065-2066	2066-2067	2067-2068	2068-2069	2069-2070	2070-2071	2071-2072	2072-2073	2073-2074	2074-2075	2075-2076	2076-2077	2077-2078	2078-2079	2079-2080	2080-2081	2081-2082	2082-2083	2083-2084	2084-2085	2085-2086	2086-2087	2087-2088	2088-2089	2089-2090	2090-2091	2091-2092	2092-2093	2093-2094	2094-2095	2095-2096	2096-2097	2097-2098	2098-2099	2099-2100	2100-2101	2101-2102	2102-2103	2103-2104	2104-2105	2105-2106	2106-2107	2107-2108	2108-2109	2109-2110	2110-2111	2111-2112	2112-2113	2113-2114	2114-2115	2115-2116	2116-2117	2117-2118	2118-2119	2119-2120	2120-2121	2121-2122	2122-2123	2123-2124	2124-2125	2125-2126	2126-2127	2127-2128	2128-2129	2129-2130	2130-2131	2131-2132	2132-2133	2133-2134	2134-2135	2135-2136	2136-2137	2137-2138	2138-2139	2139-2140	2140-2141	2141-2142	2142-2143	2143-2144	2144-2145	2145-2146	2146-2147	2147-2148	2148-2149	2149-2150	2150-2151	2151-2152	2152-2153	2153-2154	2154-2155	2155-2156	2156-2157	2157-2158	2158-2159	2159-2160	2160-2161	2161-2162	2162-2163	2163-2164	2164-2165	2165-2166	2166-2167	2167-2168	2168-2169	2169-2170	2170-2171	2171-2172	2172-2173	2173-2174	2174-2175	2175-2176	2176-2177	2177-2178	2178-2179	2179-2180	2180-2181	2181-2182	2182-2183	2183-2184	2184-2185	2185-2186	2186-2187	2187-2188	2188-2189	2189-2190	2190-2191	2191-2192	2192-2193	2193-2194	2194-2195	2195-2196	2196-2197	2197-2198	2198-2199	2199-2200	2200-2201	2201-2202	2202-2203	2203-2204	2204-2205	2205-2206	2206-2207	2207-2208	2208-2209	2209-2210	2210-2211	2211-2212	2212-2213	2213-2214	2214-2215	2215-2216	2216-2217	2217-2218	2218-2219	2219-2220	2220-2221	2221-2222	2222-2223	2223-2224	2224-2225	2225-2226	2226-2227	2227-2228	2228-2229	2229-2230	2230-2231	2231-2232	2232-2233	2233-2234	2234-2235	2235-2236	2236-2237	2237-2238	2238-2239	2239-2240	2240-2241	2241-2242	2242-2243	2243-2244	2244-2245	2245-2246	2246-2247	2247-2248	2248-2249	2249-2250	2250-2251	2251-2252	2252-2253	2253-2254	2254-2255	2255-2256	2256-2257	2257-2258	2258-2259	2259-2260	2260-2261	2261-2262	2262-
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Lys 1	Asp	Met	Ser	Thr 5	Lys	Asn	Ser	Ser	Arg 10	Phe	Thr	Pro	Val	Ile 15	Ile
Ala	Ile	Ser	Val	Val	Ile	Gly	Ile	Leu	Ile	Gly	Thr	Phe	Tyr	Ala	Lys
			20					25					30		
His	Phe	Ala	Gly	Asn	Arg	Leu	Gly	Ile	Ile	Asn	Gly	Ser	Ser	Asn	Lys
		35					40					45			
Leu	Asn	Ala	Leu	Leu	Arg	Ile	Val	Asp	Asp	Gln	Tyr	Val	Asp	Thr	Val
	50					55				60					
Asn	Met	Ala	Asp	Leu	Val	Glu	Lys	Ala	Met	Pro	Gln	Ile	Leu	Ala	Glu
65					70					75					80
Leu	Asp	Pro	His	Ser	Thr	Tyr	Ile	Pro	Ala	Gln	Asn	Leu	Glu	Glu	Val
				85					90					95	
Thr	Ser	Glu	Leu	Glu	Gly	Ser	Phe	Ser	Gly	Ile	Gly	Ile	Gln	Phe	Thr
			100					105					110		
Ile	Gln	Asp	Asp	Thr	Ile	His	Val	Asn	Ser	Val	Ile	Gln	Gly	Gly	Pro
		115					120					125			
Ser	Glu	Lys	Val	Gly	Leu	Met	Ala	Gly	Asp	Arg	Ile	Val	Met	Val	Asp
	130					135					140				
Asp	Ser	Leu	Phe	Val	Gly	Lys	Lys	Val	Thr	Asn	Glu	Arg	Ala	Met	Arg
145					150					155					160
Thr	Leu	Lys	Gly	Pro	Lys	Gly	Thr	Gln	Val	Lys	Leu	Gly	Val	Lys	Arg
				165				170					175		
Ala	Thr	Glu	Lys	Asp	Leu	Leu	Asn	Phe	Thr	Ile	Thr	Arg	Gly	Asp	Ile
			180					185					190		
Pro	Gln	Asn	Thr	Ile	Asp	Ala	Ala	Tyr	Met	Leu	Thr	Asp	Asp	Phe	Gly
		195					200					205			
Tyr	Ile	Gln	Val	Ser	Lys	Phe	Gly	Arg	Thr	Thr	His	Val	Glu	Leu	Leu
	210					215					220				
Asn	Ala	Ile	Ala	Leu	Leu	Asn	His	Lys	Asn	Cys	Lys	Gly	Leu	Ile	Ile
225				230						235					240
Asp	Leu	Arg	Gly	Asn	Thr	Gly	Gly	Tyr	Met	Glu	Ala	Ala	Val	Arg	Met
				245					250					255	
Val	Asn	Glu	Phe	Leu	Pro	Glu	Gly	Lys	Leu	Ile	Val	Tyr	Thr	Glu	Gly
			260					265					270		
Arg	Lys	Tyr	Pro	Arg	Ala	Asp	Glu	Phe	Ala	Asn	Gly	Thr	Gly	Ser	Cys
		275					280					285			
Gln	Lys	Met	Pro	Val	Ile	Val	Leu	Ile	Asp	Glu	Gly	Ser	Ala	Ser	Ala
	290					295					300				
Ser	Glu	Ile	Phe	Thr	Gly	Ala	Ile	Gln	Asp	Asn	Asp	Arg	Gly	Met	Val
305					310					315					320
Val	Gly	Arg	Arg	Ser	Phe	Gly	Lys	Gly	Leu	Val	Gln	Gln	Pro	Ile	Asp
				325					330					335	
Phe	Ser	Asp	Gly	Ser	Ala	Ile	Arg	Leu	Thr	Ile	Ala	Arg	Tyr	Tyr	Thr
			340					345					350		
Pro	Ser	Gly	Arg	Cys	Ile	Gln	Arg	Pro	Tyr	Gln	Asn	Gly	Lys	Asp	Arg

420 425 430
 Ser Lys Gly Leu Thr Ile Gln Phe Thr Phe His Tyr Thr Asp Asn Asn
 435 440 445
 Arg Asp Lys Leu Lys Lys Tyr Glu Asp Glu Glu Ser Leu Leu Asn Tyr
 450 455 460
 Met Arg Arg Gln Gly Leu Val Glu Gln Phe Ile Arg Tyr Ala Asp Ser
 465 470 475 480
 Lys Gly Val Lys Arg Arg Ile Ile Leu Ile Gln Lys Ser Tyr
 485 490

<210> 7195
 <211> 609
 <212> PRT
 <213> B.fragilis

<400> 7195

Asn Ile Leu Gly Leu Met Ser Phe Leu Lys Phe Ile Phe Thr His Cys
 1 5 10 15
 Leu Ile Leu Lys Ser Phe Ile Met Arg Ala Leu Ile Tyr Val Val Cys
 20 25 30
 Leu Ile Gly Ala Met Cys Gly Trp Ser Cys Ser Asp His Ile Ala Asp
 35 40 45
 Ser Ser Asp Leu Ser Val Gln Thr Arg Thr Ile Val Ser Pro Glu Gly
 50 55 60
 Val Ser Thr Ser Asn Pro Asp Leu Ile Ser Asp Trp Glu His Gln Ser
 65 70 75 80
 Leu Leu Thr Leu Ser Thr Gly Glu Arg Ile Asn Thr Pro Trp Thr Pro
 85 90 95
 Gly Ala Ser His Ser Met Ser Glu Glu Thr Val Ser Asp Ile Lys Lys
 100 105 110
 Glu Asp Gly Trp Thr Met Leu Phe His Thr Phe Lys Ala Leu Asn Glu
 115 120 125
 Ser Pro Asn Ser Asn Tyr Leu Cys Phe Tyr Asn Glu Leu Thr Gly Val
 130 135 140
 Ile Lys Val Phe Tyr Tyr Ile Lys Asn Ala Gln Gly Asn Asn Gly Phe
 145 150 155 160
 Gln Trp Arg Ile Ser Thr Ala Asn Gly Val Gly Ser Ser Leu Leu Ala
 165 170 175
 Leu Asn Ser Tyr Ile Ser Pro Leu Asp Asn Ser Ser Asp Lys Pro Asn
 180 185 190
 Cys Met Asn Leu Ser Thr Phe Ala Gln Thr Pro Ile Asn Gly Leu Thr
 195 200 205
 Pro Gly Trp Asn Gly Phe Glu Phe Glu Val Pro Tyr Thr Thr Asp Tyr
 210 215 220
 Arg Asn Ile Ser Leu Ser Ile Asn Ser Tyr Asn Gln Val Ile Thr Asp
 225 230 235 240
 Phe Asn Phe Ser Gly Thr Thr Glu Leu Lys Thr Glu Gly Thr Ile Thr
 245 250 255
 Lys Asn Val Ala Asn Gly Gly Gly Thr Thr Lys Thr Ala Ala Thr Leu
 260 265 270
 Ala Ser Ser Gly Ala Lys Lys Tyr Met Asp Glu Leu Lys Lys Lys Ala
 275 280 285
 Asn Gly Gln Pro Ser Asn Ile Ala Gly Asp Val Lys Leu Gly Lys Lys
 290 295 300
 Ile Val Asp Ala Leu Thr Ser Gly Asn Tyr Phe Ser Ala Ile Ala Lys
 305 310 315 320
 Gly Leu Lys Phe Ile Phe Gly Ser Thr Thr Thr Arg Pro Glu Val Ser
 325 330 335
 Lys Val Ser Leu Thr Thr Thr Gly Val Val Thr Met Gly Gly Thr Ser

340	345	350
Gln Ser Gly Ser His Asp Asn Val	Glu Pro Leu Phe Ser	Ile Asn Leu
355	360	365
Tyr Asp Leu Met Asn Gly Asn Leu	Ala Ala Leu Lys Lys	Ser Pro Ser
370	375	380
Phe Asn Ser Leu Val Leu Pro Val	Asp Val Thr Thr	Arg Ser Gly Gly
385	390	395
Glu Arg Tyr Ala Gly Val Trp Thr	Leu Lys Glu Ser	Pro Val Ile Arg
405	410	415
Met Thr Arg Tyr Gly Arg Val Leu	Asn Tyr Asn Ile	Ser Gly Gly Val
420	425	430
Phe Thr Val Ala Ser Val Leu Leu	Pro Tyr Leu Asp	Ser Asn Val Asn
435	440	445
Lys Lys Ala Ser Val Ile Leu Asn	Pro Tyr Leu Ser	Gln Tyr Val Thr
450	455	460
Ser Met Gln Thr Met Val Asp Val	Val Ser Cys Ala	Lys Leu Asn Gly
465	470	475
Glu Lys Tyr Phe Asn Gly Tyr Ala	Ile Ser Asp Phe	Met Ser Glu Asp
485	490	495
Pro Ile Tyr Glu Asp Lys Asp Leu	Ala Ile Arg Lys	Ser Ala Phe Ser
500	505	510
Gly Ser Gly Gly Glu Ile Cys Asn	Gln Ser Ile Ser	Ile Ser Asp Tyr
515	520	525
Asn Ile Gly Asp Gly Gly Asn Gln	Asn Met Tyr Phe	Phe Asp Trp Gly
530	535	540
Thr Asn Ile Lys Gly Asp Glu Val	Ala Val Val Thr	Val Asn Ile Ala
545	550	555
Tyr Asn Tyr Lys Gly Lys Val His	Asn Val Ser Ile	Ser Arg Asn Tyr
565	570	575
Lys Val Gln Tyr Val His Asp Pro	Ala Thr Asp Val	Lys Ile Leu Gly
580	585	590
Thr Ala Gly Thr Lys Lys Val Val	Ile Val Asn Asn	Tyr Pro Gln Phe
595	600	605
Glu		

<210> 7196
 <211> 148
 <212> PRT
 <213> B.fragilis

<400> 7196
 Lys Lys Met Gly Lys Ser Thr Phe Leu Gln Asp Phe Lys Ala Phe Ala
 1 5 10 15
 Met Lys Gly Asn Val Val Asp Met Ala Val Gly Val Ile Ile Gly Gly
 20 25 30
 Ala Phe Gly Lys Ile Val Ser Ser Val Val Ala Asp Ile Ile Met Pro
 35 40 45
 Pro Leu Gly Leu Leu Ile Gly Gly Val Asn Phe Thr Asp Leu Lys Trp
 50 55 60
 Val Met Lys Ala Ala Glu Tyr Gly Ala Asp Gly Lys Glu Thr Ala Ala
 65 70 75 80
 Ala Val Thr Leu Asn Tyr Gly Asn Phe Leu Gln Ala Thr Phe Asp Phe
 85 90 95
 Leu Ile Ile Ala Phe Ser Ile Phe Leu Phe Ile Lys Leu Ile Thr Lys
 100 105 110
 Leu Thr Gln Lys Lys Ala Glu Ala Pro Ala Ala Pro Pro Ala Pro Pro
 115 120 125
 Ala Pro Thr Lys Glu Glu Ile Leu Leu Thr Glu Ile Arg Asp Leu Leu

130
Lys Glu Lys Gln
145

135

140

<210> 7197
<211> 138
<212> PRT
<213> B.fragilis

<400> 7197
Lys Gln Gly Val Pro Ser Glu Val Gly Asp Val Pro Val Arg Ala His
1 5 10 15
Val Phe Ala Lys Glu Phe Ser Cys Val Val Arg Met Leu Gly Leu Tyr
20 25 30
Ile Lys Lys Glu Asn Leu Ile Ser Gln Ile Leu Phe Arg Ala Glu Asp
35 40 45
Gly Ala Gln Thr Arg Asp Pro Gln Leu Gly Arg Leu Met Leu Tyr Gln
50 55 60
Leu Ser Tyr Phe Arg Asn Phe Cys Gly Gln Arg Trp Ile Arg Thr Thr
65 70 75 80
Glu Val Glu Arg Gln Gln Ile Tyr Ser Leu Pro His Leu Ala Thr Leu
85 90 95
Val Phe Ala Leu Leu Phe Ala Phe Glu Ser Leu Cys Phe Leu Leu Ser
100 105 110
Arg Phe Val Ser Gln Leu Arg Cys Lys Asp Thr Thr Ile Tyr Leu Asn
115 120 125
Ser Lys Gln Asn Arg Ser Phe Leu Leu Gln
130 135

<210> 7198
<211> 66
<212> PRT
<213> B.fragilis

<400> 7198
Ser His Leu Phe Arg Phe Thr Ile Glu Asn Leu Val Val Glu Ile Ala
1 5 10 15
Asn Ile Ser Phe Ile Thr Val Tyr Val Leu Trp Gly Glu Lys Leu Glu
20 25 30
Leu Ser Phe Asp Ile Ser Leu Glu Thr Lys Ile Leu Trp Pro Phe Leu
35 40 45
Leu Pro Ser Gly Asn Ala Cys Phe Asn Ser Met Leu Lys Gln Val Phe
50 55 60
Cys Ile
65

<210> 7199
<211> 83
<212> PRT
<213> B.fragilis

<220>
<221> UNSURE
<222> (20)
<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7199
His Phe Arg Ala Gly Gln Ile Leu Arg Ile Phe Pro Lys Lys Val Thr
1 5 10 15

Gly Lys Val Xaa Pro Thr Leu Arg Pro Cys Ser Ser Asp Thr Ile Leu
 20 25 30
 Arg Ala Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp
 35 40 45
 Gln Gly Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu
 50 55 60
 Val Ile Asn Ala Leu Gly Phe Thr Gly Gln Leu Lys Glu Ile Trp Glu
 65 70 75 80
 Ile Arg Cys

<210> 7200
 <211> 696
 <212> PRT
 <213> B.fragilis

<400> 7200

Lys Ala Leu Leu Leu Leu Tyr Leu Lys Ser Asn Gln Lys Pro Met Ile
 1 5 10 15
 Lys Lys Ile Leu Ala Ala Leu Leu Leu Phe Pro Thr Phe Ala Tyr Ala
 20 25 30
 Gln Ile Asn Thr Asp Arg Val Met Met Ile Ala Arg Asn Ala Leu Tyr
 35 40 45
 Phe Glu Asp Tyr Val Leu Ser Ile Gln Tyr Phe Asn Gln Val Ile Asn
 50 55 60
 Ala Lys Pro Tyr Leu Tyr Glu Pro Tyr Phe Phe Arg Gly Leu Ala Lys
 65 70 75 80
 Ile Asn Leu Asp Asp Tyr Gln Gly Ala Glu Ala Asp Cys Asp Ala Ala
 85 90 95
 Ile Asp Arg Asn Pro Phe Val Val Gly Ala Tyr Gln Ile Arg Gly Leu
 100 105 110
 Ala Arg Ile Lys Gln Asn Lys Tyr Asp Gly Ala Ile Glu Asp Tyr Lys
 115 120 125
 Lys Ala Leu His Phe Asp Pro Glu Asn Ile Thr Leu Trp His Asn Leu
 130 135 140
 Thr Leu Cys His Ile Gln Lys Glu Asp Tyr Lys Ala Ala Glu Asp Asp
 145 150 155 160
 Leu Gly Lys Leu Leu Ala Val Ala Pro Lys Tyr Thr Arg Ala Tyr Leu
 165 170 175
 Met Arg Gly Glu Val Ala Leu Lys Gln Asp Thr Leu Arg Ala Leu
 180 185 190
 Asn Asp Phe Asn Thr Ala Ile Glu Met Asp Lys Tyr Asp Pro Asp Ala
 195 200 205
 Trp Ala Ser Arg Ala Ile Val Arg Leu Gln Gln Gly Lys Tyr Ala Glu
 210 215 220
 Ala Glu Ser Asp Leu Asn His Ala Thr His Leu Asn Ala Lys Asn Ala
 225 230 235 240
 Gly Asn Tyr Ile Asn Arg Ala Leu Ala Arg Phe His Gln Asn Asn Leu
 245 250 255
 Arg Gly Ala Met Ser Asp Tyr Asp Leu Ala Leu Asp Ile Asp Pro Asn
 260 265 270
 Asn Phe Ile Gly His Tyr Asn Arg Gly Leu Leu Arg Ala Gln Val Gly
 275 280 285
 Asp Asp Asn Arg Ala Ile Glu Asp Phe Asp Phe Val Leu Gln Ile Glu
 290 295 300
 Pro Asp Asn Met Met Ala Thr Phe Asn Arg Gly Leu Leu Arg Ala Gln
 305 310 315 320
 Thr Gly Asp Tyr Arg Gly Ala Ile Lys Asp Tyr Thr Lys Val Ile Asp
 325 330 335

Val Tyr Pro Asn Phe Leu Ala Gly Tyr Tyr Gln Arg Ala Glu Ala Arg
 340 345 350
 Arg Lys Ile Gly Asp Arg Lys Gly Ala Glu Met Asp Glu Phe Lys Val
 355 360 365
 Met Lys Ala Gln Leu Asp Lys Gln Asn Gly Val Ser Asn Ala Asp Lys
 370 375 380
 Ser Val Ala Asp Asn Lys Asn Gly Asn Asn Lys Asp Glu Asn Lys Thr
 385 390 395 400
 Arg Lys Lys Ser Asp Lys Asp Met Asn Asn Tyr Arg Lys Ile Val Ile
 405 410 415
 Ala Asp Asn Ser Glu Val Glu Gln Lys Tyr Lys Ser Asp Ile Arg Gly
 420 425 430
 Arg Val Gln Asp Arg Asn Val Asn Ile Lys Met Glu Pro Met Tyr Ala
 435 440 445
 Leu Thr Tyr Tyr Glu Lys Met Ser Asp Val Lys Arg Ala Val His Tyr
 450 455 460
 Tyr Lys Tyr Ile Asp Asp Leu Asn Arg Ala Gly Val Leu Pro Lys Arg
 465 470 475 480
 Leu Tyr Ile Thr Asn Met Glu Ser Pro Leu Thr Glu Glu Gln Val Lys
 485 490 495
 Phe His Phe Ala Leu Ile Asp Thr His Thr Ser Ala Ile Val Glu Asn
 500 505 510
 Pro Lys Asp Ala Arg Thr Arg Phe Ser Arg Ala Leu Asp Phe Tyr Leu
 515 520 525
 Val Gln Asp Phe Ala Ser Ser Ile Glu Asp Leu Thr Gln Ala Ile Leu
 530 535 540
 Leu Asp Asp Ser Phe Phe Pro Ala Tyr Phe Met Arg Ser Leu Val Arg
 545 550 555 560
 Cys Lys Gln Leu Glu Tyr Gln Lys Ala Glu Glu Ala Asn Ala Ala Ser
 565 570 575
 Ala Thr Pro Ala Thr Leu Pro Gly Ile Ser Ala Pro Gln Lys Ser Glu
 580 585 590
 Val Ser Ala Leu Asp Tyr Asp Ile Val Lys Ser Asp Leu Asp His Val
 595 600 605
 Ile Thr Leu Ala Pro Asp Phe Val Tyr Ala Tyr Tyr Asn Arg Ala Asn
 610 615 620
 Val Leu Ala Met Leu Lys Asp Tyr Arg Ala Ala Ile Ala Asp Tyr Asp
 625 630 635 640
 Lys Ala Ile Glu Leu Asn Lys Glu Phe Ala Glu Ala Tyr Phe Asn Arg
 645 650 655
 Gly Leu Thr His Ile Phe Leu Gly Asn Asn Lys Asn Gly Ile Ala Asp
 660 665 670
 Leu Ser Lys Ala Gly Glu Leu Gly Ile Val Ser Ala Tyr Asn Ile Leu
 675 680 685
 Lys Arg Phe Thr Glu Val Pro Glu
 690 695

<210> 7201

<211> 649

<212> PRT

<213> B.fragilis

<400> 7201

His Asn Ile Met Ile Lys Ile Thr Phe Pro Asp Gly Ser Val Arg Glu
 1 5 10 15
 Tyr Asn Glu Gly Val Asn Gly Leu Gln Ile Ala Glu Ser Ile Ser Ser
 20 25 30
 Arg Leu Ala Gln Asp Val Leu Ala Cys Gly Val Asn Gly Glu Ile Tyr
 35 40 45

Asp	Leu	Gly	Arg	Pro	Ile	Asn	Glu	Asp	Ala	Ser	Val	Val	Leu	Tyr	Lys
50						55					60				
Trp	Glu	Asp	Glu	Gln	Gly	Lys	His	Ala	Phe	Trp	His	Thr	Ser	Ala	His
65					70					75					80
Leu	Leu	Ala	Glu	Ala	Leu	Gln	Glu	Leu	Tyr	Pro	Gly	Ile	Gln	Phe	Gly
				85					90					95	
Ile	Gly	Pro	Ala	Ile	Glu	Asn	Gly	Phe	Tyr	Tyr	Asp	Val	Asp	Pro	Gly
			100					105					110		
Glu	Ala	Val	Ile	Lys	Glu	Ala	Asp	Leu	Pro	Ala	Ile	Glu	Ala	Lys	Met
		115					120					125			
Ala	Glu	Leu	Val	Ala	Lys	Lys	Glu	Ala	Val	Val	Arg	Arg	Asp	Ile	Ala
	130					135					140				
Lys	Gly	Asp	Ala	Leu	Lys	Met	Phe	Gly	Asp	Arg	Gly	Glu	Thr	Tyr	Lys
145				150						155					160
Cys	Glu	Leu	Ile	Ser	Glu	Leu	Glu	Asp	Gly	His	Ile	Thr	Thr	Tyr	Thr
				165					170					175	
Gln	Gly	Asp	Phe	Thr	Asp	Leu	Cys	Arg	Gly	Pro	His	Leu	Met	Thr	Thr
			180					185					190		
Ala	Pro	Ile	Lys	Ala	Ile	Lys	Leu	Thr	Ser	Val	Ala	Gly	Ala	Tyr	Trp
		195					200					205			
Arg	Gly	His	Glu	Asp	Arg	Lys	Met	Leu	Thr	Arg	Ile	Tyr	Gly	Ile	Thr
	210					215					220				
Phe	Pro	Lys	Lys	Lys	Met	Leu	Asp	Glu	Tyr	Leu	Ala	Leu	Met	Glu	Glu
225					230					235					240
Ala	Lys	Lys	Arg	Asp	His	Arg	Lys	Ile	Gly	Lys	Glu	Met	Gln	Leu	Phe
				245					250					255	
Met	Phe	Ser	Asp	Thr	Val	Gly	Lys	Gly	Leu	Pro	Met	Trp	Leu	Pro	Lys
			260					265				270			
Gly	Thr	Ala	Leu	Arg	Leu	Arg	Leu	Gln	Asp	Phe	Leu	Arg	Arg	Ile	Gln
		275					280					285			
Thr	Arg	Tyr	Asp	Tyr	Gln	Glu	Val	Ile	Thr	Pro	Pro	Ile	Gly	Asn	Lys
	290					295					300				
Leu	Leu	Tyr	Val	Thr	Ser	Gly	His	Tyr	Ala	Lys	Tyr	Gly	Lys	Asp	Ala
305					310					315					320
Phe	Gln	Pro	Ile	His	Thr	Pro	Glu	Glu	Gly	Glu	Glu	Tyr	Phe	Leu	Lys
				325					330					335	
Pro	Met	Asn	Cys	Pro	His	His	Cys	Glu	Ile	Tyr	Lys	Asn	Phe	Pro	Arg
			340					345					350		
Ser	Tyr	Lys	Asp	Leu	Pro	Leu	Arg	Ile	Ala	Glu	Phe	Gly	Thr	Val	Cys
		355					360					365			
Arg	Tyr	Glu	Gln	Ser	Gly	Glu	Leu	His	Gly	Leu	Thr	Arg	Val	Arg	Ser
	370					375					380				
Phe	Thr	Gln	Asp	Asp	Ala	His	Ile	Phe	Cys	Arg	Pro	Asp	Gln	Val	Lys
385					390					395					400
Gly	Glu	Phe	Leu	Arg											

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<210> 7202
<211> 421
<212> PRT
<213> B.fragilis
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Lys 1	Arg	Leu	Ile	Ala 5	Asn	Tyr	Thr	Phe	Ile 10	His	Leu	Ile	Ile	Ile 15	Asn
Met	Arg	Gln	Lys 20	Ser	Leu	Leu	Leu	Leu	Leu 25	Pro	Phe	Leu	Leu	Leu 30	Ser
Cys	Gly	Gly	Lys 35	Lys	Asn	Ser	Gly	Gln	Leu 40	Ser	Asp	Thr	Ala	Val	Gln
Ile	Val	Lys	Pro	Glu	Phe	Pro 55	Gln	Ile	Val	Pro	Phe	Glu	Thr	Gly	Ile
Glu 65	Thr	Glu	Gln	Glu	Ile	Leu 70	Leu	Ser	Glu	Ile	Ala	Asp	Ser	Ile	Arg 80
Tyr	Ile	Pro	Leu	Glu	Thr	Asn	Asn	Lys	Cys 90	Leu	Ile	Arg	Gly	Leu	Lys
Gly	Ser	Asn	Ile	Ile	Arg	Thr	Lys	Glu	Tyr	Phe	Phe	Leu	Pro	Trp	Ile
Asp	Lys	Leu	Phe	Gln	Tyr	Thr	Lys	Asp	Gly	Lys	Phe	Ile	Arg	Thr	Leu
Gly	Arg	Lys	Gly	Gly	Gly	Pro 135	Gly	Glu	Phe	Asn	Trp	Ile	Met	Gln	Ile
Asp 145	Val	Asp	Glu	Lys	Lys	Gly 150	Leu	Val	Tyr	Met	Leu	Thr	Thr	Thr	Gly 160
Lys	Ile	Asn	Ile	Tyr	Ser	Met	Glu	Thr	Gly	Lys	Phe	Ile	Arg	Ala	Met
Lys	Val	Pro	Asn	Ile	Glu	Val	Ser	Glu	Phe	Ala	Met	Leu	Arg	Val	Gln
Asp	Thr	Ile	Ala	Ala	Thr	Phe	Met	Arg	Asn	Asn	Asn	Gly	Lys	Arg	Lys
Glu	Arg	Ile	Tyr	Leu	Ser	Asn	Leu	Lys	Gly	Asp	Thr	Leu	Lys	Ile	Phe
Asn 225	Arg	Trp	Asp	Leu	Phe	Asp	Leu	Asn	Ser	Lys	Tyr	Arg	Trp	Met	Ile
Ser	Ser	Asp	Ile	Asp	Arg	Tyr	Met	Phe	His	Tyr	Lys	Ser	His	Thr	Cys
Tyr	Lys	Glu	Tyr	Tyr	Asn	Asp	Thr	Leu	Phe	Thr	Ile	Thr	Gln	Glu	Thr
Leu	Glu	Pro	Arg	Tyr	Ile	Phe	Gln	Met	Gly	Lys	Tyr	Ser	Leu	Pro	Ile

275	280	285
Glu Cys Arg Phe Glu Tyr	Leu Asn Gly Asp Gly Lys	Arg Phe Gln Glu
290	295	300
Val Ala Ala Pro Tyr Ile	Gln Tyr Asn Thr Ile	Glu Thr Asp Ser Tyr
305	310	315
Ile Phe Met Pro Tyr Ser	Asn Trp Ala Gly Glu	Lys Ala Gln Glu Lys
325	330	335
Gln Met Ala Ile Tyr Asp	Lys Lys Ala Lys Asn	Cys Phe Lys Val Ser
340	345	350
Thr Gly His Ile Lys Asn	Asp Leu Thr Pro Gly	Leu Pro Leu Arg Pro
355	360	365
Ile Thr Ala Leu Asp Ser	His Thr Leu Leu Tyr	Val Trp Glu Ala Pro
370	375	380
Glu Leu Leu Glu Lys Ala	Glu Lys Thr Pro Ser	Ile Leu Gln Ile Glu
385	390	395
Pro Leu Lys Gly Leu Lys	Glu Asp Asp Asn Pro	Val Met Met Ile Val
405	410	415
Tyr Leu Lys Gln Pro		
420		

<210> 7203

<211> 116

<212> PRT

<213> B.fragilis

<400> 7203

Leu Asn Leu Val Asp Asn	Lys Lys Gln Thr Gly	Ser Lys Arg Tyr Leu
1	5	10
Met Lys Asn Asp Ser Met	Lys Ser Gln Tyr Arg	Ile Asn Glu Gln Ile
20	25	30
Arg Ala Lys Glu Val Arg	Ile Val Gly Asp Asp	Val Glu Pro Lys Val
35	40	45
Tyr Pro Ile Phe Gln Ala	Leu Lys Leu Ala Glu	Glu Lys Glu Leu Asp
50	55	60
Leu Val Glu Ile Ser Pro	Asn Ala Gln Pro Pro	Val Cys Arg Ile Ile
65	70	75
Asp Tyr Ser Lys Phe Leu	Tyr Gln Leu Lys Lys	Arg Gln Lys Glu Gln
85	90	95
Lys Ala Lys Gln Val Lys	Val Asn Val Lys Glu	Ile Arg Phe Gly Pro
100	105	110
Gln Thr Asp Asp		
115		

<210> 7204

<211> 74

<212> PRT

<213> B.fragilis

<400> 7204

Tyr Ser Lys Ser Lys Cys	Val Arg Phe Met Lys	Ile Ala Glu Ile Lys
1	5	10
Glu Met Ser Thr Asn Asp	Leu Val Glu Arg Val	Glu Ala Glu Val Val
20	25	30
Asn Tyr Asn Gln Met Val	Ile Asn His Ser Ile	Ser Pro Leu Glu Asn
35	40	45
Pro Ala Gln Ile Lys Gln	Leu Arg Arg Thr Ile	Ala Arg Met Arg Thr
50	55	60
Glu Leu Arg Gln Arg Glu	Leu Asn Asn Lys	
65	70	

<210> 7205
 <211> 146
 <212> PRT
 <213> B.fragilis

<400> 7205

Glu	Thr	Met	Leu	Gln	Pro	Lys	Lys	Thr	Lys	Phe	Arg	Arg	Gln	Gln	Lys
1				5					10					15	
Gly	Arg	Ala	Lys	Gly	Asn	Ala	Gln	Arg	Gly	Asn	Gln	Leu	Ala	Phe	Gly
			20					25					30		
Ser	Phe	Gly	Ile	Lys	Ala	Leu	Glu	Thr	Lys	Trp	Ile	Thr	Gly	Arg	Gln
		35					40					45			
Ile	Glu	Ala	Ala	Arg	Ile	Ala	Val	Thr	Arg	Tyr	Met	Gln	Arg	Gln	Gly
	50					55					60				
Gln	Ile	Trp	Ile	Arg	Ile	Phe	Pro	Asp	Lys	Pro	Ile	Thr	Arg	Lys	Pro
65					70					75					80
Ala	Asp	Val	Arg	Met	Gly	Lys	Gly	Lys	Gly	Ser	Pro	Glu	Gly	Phe	Val
				85					90					95	
Ala	Pro	Val	Thr	Pro	Gly	Arg	Ile	Ile	Ile	Glu	Ala	Glu	Gly	Val	Ser
			100					105					110		
Tyr	Glu	Ile	Ala	Lys	Glu	Ala	Leu	Arg	Leu	Ala	Ala	Gln	Lys	Leu	Pro
		115					120						125		
Ile	Thr	Thr	Lys	Phe	Val	Val	Arg	Arg	Asp	Tyr	Asp	Ile	Gln	Asn	Gln
	130					135					140				
Asn	Ala														
145															

<210> 7206
 <211> 244
 <212> PRT
 <213> B.fragilis

<400> 7206

Met	Gly	Gln	Lys	Val	Asn	Pro	Ile	Ser	Asn	Arg	Leu	Gly	Ile	Ile	Arg
1				5					10					15	
Gly	Trp	Asp	Ser	Asn	Trp	Tyr	Gly	Gly	Asn	Asp	Tyr	Gly	Asp	Ser	Leu
			20					25					30		
Leu	Glu	Asp	Ser	Lys	Ile	Arg	Lys	Tyr	Leu	Asn	Ala	Arg	Leu	Ala	Lys
		35					40					45			
Ala	Ser	Val	Ser	Arg	Ile	Val	Ile	Glu	Arg	Thr	Leu	Lys	Leu	Val	Thr
	50					55					60				
Ile	Thr	Val	Cys	Thr	Ala	Arg	Pro	Gly	Ile	Ile	Ile	Gly	Lys	Gly	Gly
65					70					75					80
Gln	Glu	Val	Asp	Lys	Leu	Lys	Glu	Glu	Leu	Lys	Lys	Val	Thr	Asp	Lys
			85						90					95	
Asp	Ile	Gln	Ile	Asn	Ile	Phe	Glu	Val	Lys	Arg	Pro	Glu	Leu	Asp	Ala
			100					105					110		
Val	Ile	Val	Ala	Asn	Asn	Ile	Ala	Arg	Gln	Val	Glu	Gly	Lys	Ile	Ala
		115					120					125			
Tyr	Arg	Arg	Ala	Ile	Lys	Met	Ala	Ile	Ala	Asn	Thr	Met	Arg	Met	Gly
	130					135					140				
Ala	Glu	Gly	Ile	Lys	Ile	Gln	Ile	Ser	Gly	Arg	Leu	Asn	Gly	Ala	Glu
145					150					155					160
Met	Ala	Arg	Ser	Glu	Met	Tyr	Lys	Glu	Gly	Arg	Thr	Pro	Leu	His	Thr
			165						170					175	
Phe	Arg	Ala	Asp	Ile	Asp	Tyr	Cys	His	Ala	Glu	Ala	Leu	Thr	Lys	Val
			180					185					190		
Gly	Leu	Leu	Gly	Ile	Lys	Val	Trp	Ile	Cys	Arg	Gly	Glu	Val	Phe	Gly

195 200 205
 Lys Arg Glu Leu Ala Pro Asn Phe Thr Gln Ser Lys Glu Ser Gly Arg
 210 215 220
 Gly Asn Asn Gly Gly Asn Asn Gly Gly Gly Lys Asn Phe Lys Arg Lys
 225 230 235 240
 Lys Asn Asn Arg

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<400> 7207
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 Arg Lys Val Thr Leu Asn Glu Ser Ile Phe Gly Ile Glu Pro Asn Asp
 20 25 30
 His Ala Ile Tyr Leu Asp Val Lys Gln Phe Met Ala Asn Gln Arg Gln
 35 40 45
 Gly Thr His Lys Ser Lys Glu Arg Ser Glu Ile Ser Gly Ser Thr Arg
 50 55 60
 Lys Ile Gly Arg Gln Lys Gly Gly Gly Gly Ala Arg Arg Gly Asp Met
 65 70 75 80
 Asn Ser Pro Val Leu Val Gly Gly Gly Arg Val Phe Gly Pro Lys Pro
 85 90 95
 Arg Asp Tyr Tyr Phe Lys Leu Asn Lys Lys Val Lys Thr Leu Ala Arg
 100 105 110
 Lys Ser Ala Leu Ser Tyr Lys Ala Gln Asp Asn Ala Ile Val Val Val
 115 120 125
 Glu Asp Phe Asn Phe Glu Ala Pro Lys Thr Lys Val Phe Val Glu Met
 130 135 140
 Thr Lys Asn Leu Lys Val Ser Asp Lys Lys Leu Leu Val Val Leu Pro
 145 150 155 160
 Glu Ala Asn Lys Asn Val Tyr Leu Ser Ala Arg Asn Ile Glu Gly Ala
 165 170 175
 Asn Val Gln Thr Ile Ser Gly Leu Asn Thr Tyr Arg Val Leu Asn Ala
 180 185 190
 Gly Val Val Val Leu Thr Glu Ser Ser Leu Lys Ala Ile Asp Asn Ile
 195 200 205
 Leu Ile
 210

<210> 7208
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<400> 7208
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 Glu Lys Lys Val Leu Ala Met Asn Glu Ser Gly Lys Lys Val Val Val
 20 25 30
 Lys Thr Trp Ser Arg Ala Ser Met Ile Ser Pro Asp Phe Val Gly His
 35 40 45
 Thr Val Ala Val His Asn Gly Asn Lys Phe Ile Pro Val Tyr Val Thr
 50 55 60
 Glu Asn Met Val Gly His Lys Leu Gly Glu Phe Ala Pro Thr Arg Thr
 65 70 75 80

Phe Arg Gly His Ala Gly Asn Lys Lys Lys
85 90

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<400> 7209
Gln Tyr Leu Ile Lys Met Ala Val Arg Lys Phe Lys Pro Thr Thr Pro
1 5 10 15
Gly Gln Arg His Lys Ile Ile Gly Thr Phe Glu Glu Ile Thr Ala Ser
20 25 30
Val Pro Glu Lys Ser Leu Val Tyr Gly Lys Lys Ser Ser Gly Gly Arg
35 40 45
Asn Asn Glu Gly Lys Met Thr Met Arg Tyr Leu Gly Gly Gly His Arg
50 55 60
Lys Val Ile Arg Ile Val Asp Phe Lys Arg Asn Lys Asp Gly Val Pro
65 70 75 80
Ala Val Val Lys Thr Ile Glu Tyr Asp Pro Asn Arg Ser Ala Arg Ile
85 90 95
Ala Leu Leu Phe Tyr Ala Asp Gly Glu Lys Arg Tyr Ile Ile Ala Pro
100 105 110
Asn Gly Leu Gln Val Gly Ala Thr Leu Met Ser Gly Glu Asn Ala Ala
115 120 125
Pro Glu Ile Gly Asn Ala Leu Pro Leu Gln Asn Ile Pro Val Gly Thr
130 135 140
Val Ile His Asn Ile Glu Leu Arg Pro Gly Gln Gly Ala Ala Leu Val
145 150 155 160
Arg Ser Ala Gly Asn Phe Ala Gln Leu Thr Ser Arg Glu Gly Lys Tyr
165 170 175
Cys Val Ile Lys Leu Pro Ser Gly Glu Val Arg Gln Ile Leu Ser Thr
180 185 190
Cys Lys Ala Thr Ile Gly Ser Val Gly Asn Ser Asp His Gly Leu Glu
195 200 205
Ser Ser Gly Lys Ala Gly Arg Ser Arg Trp Gln Gly Arg Arg Pro Arg
210 215 220
Asn Arg Gly Val Val Met Asn Pro Val Asp His Pro Met Gly Gly Gly
225 230 235 240
Glu Gly Arg Ala Ser Gly Gly His Pro Arg Ser Arg Lys Gly Leu Tyr
245 250 255
Ala Lys Gly Leu Lys Thr Arg Ala Pro Lys Lys Gln Ser Ser Lys Tyr
260 265 270
Ile Ile Glu Arg Arg Lys Lys
275

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<211> 97
<212> PRT
<213> B.fragilis

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Ile Met Gly Ile Ile Ile Lys Pro Leu Val Thr Glu Lys Met Thr Ala
1 5 10 15
Ile Thr Asp Lys Leu Asn Arg Phe Gly Phe Ile Val Arg Pro Glu Ala
20 25 30
Asn Lys Leu Glu Ile Lys Ser Glu Val Glu Ala Leu Tyr Asn Val Thr
35 40 45
Val Val Asp Val Asn Thr Val Lys Tyr Ala Gly Lys Asn Lys Ser Arg

50 55 60
 Tyr Thr Lys Ala Gly Ile Ile Asn Gly Arg Thr Asn Ala Phe Lys Lys
 65 70 75 80
 Ala Ile Val Thr Leu Lys Glu Gly Asp Thr Ile Asp Phe Tyr Ser Asn
 85 90 95
 Ile

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<400> 7211
 Thr Ala Thr Val Trp Pro Thr Lys Ser Gly Glu Ile Ile Glu Ala Leu
 1 5 10 15
 Asp Gln Val Leu Thr Thr Thr Phe Leu Pro Asp Ser Phe Ile Ala Ser
 20 25 30
 Thr Phe Phe Ser Ser Phe Thr Leu Ile Tyr Gly Pro Phe Phe Asn Glu
 35 40 45
 Arg Leu Ile Val Tyr Ser Ile Asn Gln Ile Thr Phe Phe Phe Ser Gln
 50 55 60

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 Val Val Leu Ser Asn Lys Met Glu Lys Thr Ile Thr Val Ala Ala Lys
 20 25 30
 Phe Lys Glu Lys His Pro Ile Tyr Gly Lys Phe Val Ser Lys Thr Lys
 35 40 45
 Lys Tyr His Ala His Asp Glu Lys Asn Glu Cys Asn Val Gly Asp Thr
 50 55 60
 Val Arg Ile Met Glu Thr Arg Pro Leu Ser Lys Thr Lys Arg Trp Arg
 65 70 75 80
 Leu Val Glu Ile Ile Glu Arg Ala Lys
 85

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<400> 7213
 Asn Asn Lys Val Ile Asn Ile Met Gly Ala Arg Lys Lys Ile Ser Ala
 1 5 10 15
 Glu Lys Arg Lys Glu Ala Leu Lys Thr Met Tyr Phe Ala Lys Leu Gln
 20 25 30
 Asn Val Pro Thr Ser Pro Arg Lys Met Arg Leu Val Ala Asp Met Ile
 35 40 45
 Arg Gly Met Glu Val Asn Arg Ala Leu Gly Val Leu Lys Phe Ser Ser
 50 55 60
 Lys Glu Ala Ala Ala Arg Val Glu Lys Leu Leu Arg Ser Ala Ile Ala
 65 70 75 80
 Asn Trp Glu Gln Lys Asn Glu Arg Lys Ala Glu Ser Gly Glu Leu Phe

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398</
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Ser Phe His Pro Arg Gly Glu Asp Val Ser Trp Leu Ser Leu Phe Asp

1		5		10		15
Ile Gly Ile Gly Asn Gly Leu Lys Asn Lys Leu Thr Glu Ser Leu Ala						
	20			25		30
Val Asn Asn Ile Glu Tyr Ser Arg Lys Leu Val Ser Thr Ser Tyr Val						
	35			40		45
Tyr Ser Ala Leu Ile Phe Ser Val Ile Leu Val Ile Ser Leu Ile Ile						
	50			55		60
Asn Cys Phe Ile Lys Trp Asn Leu Leu Leu Asn Val Glu Gln Ile Phe						
65		70		75		80
Asn Asn Asp Leu Thr Ile Thr Ala Phe Leu Val Ile Ile Ala Phe Cys						
	85			90		95
Val Arg Phe Ile Leu Gln Ile Ile Thr Pro Val Leu Ala Ala Thr Gln						
	100			105		110
Asn Ile Arg Phe Asn Ser Leu Ile Glu Phe Ile Gly Gln Ile Gly Ala						
	115			120		125
Phe Ile Gly Val Ile Leu Leu Asn Tyr Leu Gly Val Lys Ser Ile Ile						
	130			135		140
Ile Phe Thr Ile Val Val Leu Tyr Val Pro Leu Ile Ile Leu Phe Val						
145		150		155		160
Phe Ser Ile Tyr Leu Tyr Ser Asn Lys Leu Lys Glu Leu Arg Pro Cys						
	165			170		175
Ile Arg Phe Ser Asp Lys Gln His Phe Ser Glu Ile Phe Ser Leu Gly						
	180			185		190
Ile Asn Phe Phe Ile Ile Gln Ile Ser Ala Ile Val Ile Phe Gln Thr						
	195			200		205
Asn Ser Phe Leu Ile Ala Asn Ser Phe Gly Pro Ala Asp Val Thr Lys						
	210			215		220
Tyr Asn Ile Val Phe Lys Tyr Tyr Asn Ile Leu Ile Leu Leu Trp Gly						
225		230		235		240
Ile Leu Met Thr Pro Leu Trp Pro Ser Tyr Thr Asn Ala Tyr Ile Leu						
	245			250		255
Gly Asn Tyr Lys Trp Ile Lys Lys Ser Val Lys Tyr Cys Leu Phe Met						
	260			265		270
Phe Leu Leu Thr Ile Ile Val Ala Val Ile Met Ala Phe Val Gly Pro						
	275			280		285
Ala Val Ile Glu Tyr Trp Leu Gly Gln Asp Leu Asn Ile Ser Arg Ser						
	290			295		300
Leu Leu Leu Ala Met Leu Leu Phe Ala Leu Val Ser Ile Trp Asn Asn						
305		310		315		320
Ile Phe Gly Cys Val Val Gly Ala Ile Gly Lys Val Arg Leu Gly Val						
	325			330		335
Tyr Ser Thr Ser Leu Ser Ala Leu Ile Phe Phe Pro Leu Phe Tyr Leu						
	340			345		350
Leu Lys Ser Leu Arg Leu Ala Ile Glu Gly Ala Ile Trp Ser Met Ile						
	355			360		365
Ile Cys Ile Ser Leu Ser Ala Phe Leu Ser Pro Ile Gln Ile Tyr Tyr						
	370			375		380
Phe Ile Tyr Thr Lys Lys Lys Ser Leu Phe Leu Thr Lys Leu Leu Ser						
385		390		395		400

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<211> 61

<212> PRT

<213> B.fragilis

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Asn Asn Ser Phe Asn His Ser Glu Ile Ser Ile Leu Lys Pro Arg Tyr
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Phe Pro Tyr Gly Ser Phe Val Ser Glu Ala Pro Leu Leu Arg Ile Ser

20 25 30
 Gln Ile Ser Thr Glu Arg Leu Cys Ile Cys Phe Ala Met Asn His Tyr
 35 40 45
 Tyr Leu Leu Lys Leu Tyr Pro Val Ile Gln Leu Phe Lys
 50 55 60

<210> 7217

<211> 383

<212> PRT

<213> B.fragilis

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Phe Thr Lys Phe Tyr Pro Met Lys Leu Ile Ile Asn Ala Ser Thr Leu
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 Ser Gly Thr Gly Val Thr Gln Val Ala Val Ser Phe Ile Glu Glu Cys
 20 25 30
 Lys Arg Phe Glu Glu Asn Tyr Tyr Phe Val Phe Leu Ser Asn His Val
 35 40 45
 Tyr Ser Gln Val Glu Ile Glu Lys Phe Pro Ser Asn Phe Lys Phe Tyr
 50 55 60
 Val Ile Asp Lys His Pro Arg Tyr Phe Ile Glu Gly Tyr Ser Thr Arg
 65 70 75 80
 Arg Tyr Leu Arg Thr Met Glu Ala Ile Ile Lys Pro Asp Cys Val Phe
 85 90 95
 Ser Ile Phe Gly Pro Ser Tyr Trp Thr Pro Lys Ala Pro His Leu Met
 100 105 110
 Gly Tyr Ala Tyr Pro His Tyr Val Tyr Pro Glu Ser Pro Val Phe Asp
 115 120 125
 Ile Met Thr Val Lys Asp Lys Ile Arg Phe Cys Leu Tyr Lys Lys Ile
 130 135 140
 His Lys Tyr Phe Leu Lys Lys Asn Gly Phe Tyr Tyr Val Cys Glu Thr
 145 150 155 160
 Glu Asp Val Ser Asn Arg Leu Lys Lys Tyr Leu Gly Ile Ser Ser Asp
 165 170 175
 Arg Val Tyr Thr Val Ser Asn Thr Tyr Asn His Tyr Phe Asp Gln Phe
 180 185 190
 Lys Leu Pro Leu Asn Ser Phe Val Glu Lys Asp Val Thr Glu Phe Lys
 195 200 205
 Phe Leu Ser Leu Cys Ser Phe Ala Val His Lys Asn Leu Gln Ile Leu
 210 215 220
 Asn Gln Val Ile Pro Leu Leu Asn Asp Thr Leu Lys Asn Ile Lys Ile
 225 230 235 240
 Ile Phe Val Leu Thr Val Asp Ser Lys Ser Phe Lys Tyr Tyr Leu Ser
 245 250 255
 Glu Glu Ala Lys Lys Ser Ile Val Asn Leu Gly Ile Ile Asp Val Ser
 260 265 270
 Lys Cys Pro Gln Leu Tyr Asn Glu Cys Asp Ala Leu Phe Leu Pro Thr
 275 280 285
 Leu Leu Glu Cys Phe Ser Ala Asn Tyr Val Glu Ala Met Lys Met Arg
 290 295 300
 Lys Pro Ile Val Thr Ser Asn Leu Pro Phe Ala Thr Asn Val Cys Lys
 305 310 315 320
 Asn Ala Ala Leu Tyr Phe Asp Pro Met Asn Ala His Asp Ile Val Glu
 325 330 335
 Lys Ile Ser Leu Leu Val Arg Asn Lys Gln Leu Tyr Arg Asn Leu Cys
 340 345 350
 Leu Glu Gly Asp Leu Val Leu Lys Gly Phe Lys Thr Ser Gln Glu Arg
 355 360 365
 Ala Lys Ser Tyr Leu Glu Ile Cys Lys Ser Ile Ile Arg Lys Val

370

375

380

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<400> 7218

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Asn	Ser	Ile	Phe	Ser	Leu	Ile	Leu	Val	Trp	Ile	Phe	Leu	Thr	Ser	Thr
		20						25					30		
Ala	Pro	Phe	Val	Phe	Phe	Arg	Trp	Pro	Gly	His	Pro	Tyr	Lys	Thr	Leu
		35					40					45			
Ser	Phe	Leu	Cys	Leu	Phe	Thr	Met	Val	Phe	His	Leu	Asn	Val	Gly	Arg
	50					55					60				
Gly	Val	Lys	Arg	Val	Asp	Ser	Ser	Ile	Phe	Ala	Ile	Val	Leu	Leu	Gln
65					70					75					80
Ile	Cys	Tyr	Tyr	Ile	Leu	Ile	Ser	Phe	Tyr	His	Ser	Asp	Phe	Lys	Asn
				85					90					95	
Ile	Asn	Leu	Cys	Ile	Gln	Leu	Ile	Ser	Leu	Cys	Ile	Ile	Ile	Ser	Tyr
		100						105						110	
Ile	Lys	Ile	Tyr	Val	Gly	Phe	Asp	Val	Phe	Val	Lys	Ser	Phe	Ile	Trp
		115					120					125			
Ile	Met	Leu	Ile	Met	Gly	Val	Gly	Gly	Thr	Leu	Thr	Phe	Phe	Leu	His
	130				135						140				
Leu	Leu	Gly	Leu	Ile	Thr	Pro	Ile	Phe	Arg	Val	Glu	Tyr	Gly	Ser	Asp
145					150					155					160
Ile	Ser	Tyr	Phe	Leu	Gly	Leu	Thr	Thr	Thr	Asn	Val	Phe	Phe	Asp	Ser
			165					170						175	
Glu	Gly	Ile	Arg	Val	Ile	Arg	Tyr	Ala	Gly	Phe	Phe	Asp	Glu	Pro	Gly
			180					185					190		
Thr	Phe	Ser	Leu	Phe	Ser	Ile	Phe	Ala	Leu	Ile	Leu	Asn	Lys	Val	Tyr
		195					200					205			
Phe	Asn	Asp	Lys	Asn	Lys	Glu	Leu	Leu	Leu	Ile	Leu	Val	Thr	Ile	Phe
	210					215					220				
Thr	Phe	Ser	Ile	Ala	Phe	Tyr	Val	Thr	Ile	Phe	Phe	Tyr	Phe	Leu	Phe
225					230					235					240
Phe	Tyr	Val	Thr	Lys	Lys	Asp	Met	Lys	Tyr	Val	Pro	Leu	Ile	Ile	Ser
				245					250					255	
Val	Val	Phe	Ile	Cys	Tyr	Leu	Ser	Leu	Gln	Asn	Ser	Asn	Gly	Gly	Ser
		260						265					270		
Leu	Gly	Thr	Ile	Tyr	Lys	Leu	Thr	Phe	Glu	Arg	Leu	Asp	Phe	Ser	Glu
		275					280					285			
Asp	Ala	Arg	Gly	Asn	Asn	Asn	Arg	Ala	Gly	Pro	Met	Glu	Asn	Asp	Arg
	290					295					300				
Arg	Ile	Phe	Phe	Asn	Asn	Phe	Leu	Leu	Gly	Val	Gly	Leu	Gly	Ser	Glu
305					310					315					320
Glu	Val	Glu	Gly	Ser	Asn	Val	Phe	Ala	Val	Phe	Ala	Arg	Tyr	Gly	Val
				325					330					335	
Ile	Gly	Ser	Phe	Phe	Phe	Tyr	Ala	Phe	Leu	Ile	Tyr	Leu	Leu	Leu	Leu
		340						345					350		
Ile	Val	Asn	Val	Pro	Leu	Glu	Asn	Arg	Lys	Leu	Phe	Phe	Lys	Ile	Tyr
		355					360					365			
Ile	Val	Ile	Leu	Leu	Thr	Phe	Phe	Tyr	Arg	Pro	Glu	Leu	Ser	Ser	Val
	370					375					380				
Met	Val	Leu	Leu	Val	Phe	Tyr	Met	Leu	Ile	Asp	Tyr	Ile	Lys	Ser	Lys
385					390					395					400
Lys	Tyr	Leu	Asn	Cys	Lys	Asn									

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400

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<400> 7219

Gly	Lys	Met	Thr	Lys	Ala	Asp	Ile	Val	Asn	Glu	Ile	Ala	Lys	Asn	Thr
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Gly	Val	Asp	Lys	Val	Thr	Val	Leu	Thr	Thr	Val	Glu	Ala	Phe	Met	Asp
		20					25						30		
Ala	Val	Lys	Asp	Ser	Leu	Ser	Lys	Asp	Glu	Asn	Val	Tyr	Leu	Arg	Gly
		35					40					45			
Phe	Gly	Ser	Phe	Val	Val	Lys	Lys	Arg	Ala	Gln	Lys	Thr	Ala	Arg	Asn
	50					55				60					
Ile	Ser	Lys	Asn	Thr	Thr	Ile	Ile	Ile	Pro	Glu	His	Asn	Ile	Pro	Ala
65					70					75					80
Phe	Lys	Pro	Ala	Lys	Thr	Phe	Thr	Leu	Ser	Val	Lys	Lys			
				85					90						

<210> 7220
 <211> 309
 <212> PRT
 <213> B.fragilis

<400> 7220

Tyr	Met	Asn	Ala	Leu	Val	Thr	Asn	Pro	Leu	Val	Ser	Ile	Val	Ile	Pro
1				5					10					15	
Val	Tyr	Asn	Arg	Glu	Leu	Tyr	Ile	Glu	Asp	Ala	Ile	Lys	Ser	Ala	Ile
		20					25					30			
Ser	Gln	Thr	Tyr	Gln	Asn	Ile	Glu	Ile	Ile	Ile	Val	Asp	Asn	Cys	Ser
		35					40					45			
Thr	Asp	Leu	Thr	Trp	Ser	Ile	Leu	Asn	Thr	Trp	Ala	Ser	Lys	Asp	His
	50				55					60					
Arg	Ile	Lys	Ile	Tyr	Gln	Asn	Lys	Thr	Asn	Ile	Gly	Pro	Val	Leu	Asn
65					70				75						80
Trp	Asn	Glu	Cys	Phe	Lys	His	Ala	Ser	Gly	Glu	Tyr	Ile	Lys	Ile	Leu
			85						90					95	
Trp	Ser	Asp	Asp	Trp	Met	Ala	Leu	Asp	Phe	Ile	Glu	Arg	Ala	Val	Asn
		100						105					110		
Leu	Ile	Asp	Glu	Lys	Ser	Ala	Phe	Val	Ile	Ser	Asn	His	Lys	Ile	Val
		115					120					125			
Ser	Glu	Asn	Gly	Ile	Val	Asp	Asn	Val	Lys	Tyr	Lys	Lys	Gln	Lys	Tyr
	130					135				140					
Thr	Arg	Lys	Glu	Tyr	Leu	Tyr	Asn	Ile	Leu	Phe	Gln	Asn	Ile	Glu	Lys
145					150					155					160
Phe	Pro	Leu	Ser	Pro	Gly	Cys	Ala	Leu	Phe	Arg	Thr	Lys	Asp	Leu	Asn
			165					170						175	
Asp	Asn	Phe	Val	Ile	Asp	Ile	Pro	Asn	Thr	Asp	Gly	Leu	Asp	Ser	Lys
		180					185						190		
Lys	Asn	Gly	Ala	Gly	Asn	Asp	Leu	Leu	Ile	Phe	Leu	Asn	Ile	Val	Leu
	195					200					205				
Asn	Tyr	Ala	His	Ile	Ser	Ile	Leu	Gln	Tyr	Asp	Gly	Ser	Phe	Phe	Arg
	210					215				220					
Ala	His	Lys	Glu	Ser	Phe	Ser	Ile	Gln	Asn	Gln	Leu	Glu	Leu	Tyr	Tyr
225					230					235					240
Glu	Trp	Ala	Lys	Val	Tyr	Phe	Ile	Gln	Lys	Lys	Leu	Asn	Lys	Thr	Tyr
				245					250						255

Tyr Ser Asn Ile Lys Lys Ile Met Phe Trp Gln Gln Ile Asn Lys Gly
 260 265 270
 Asn Lys Ile Tyr His Asn Leu Tyr Val Cys Leu Lys Tyr Asn Tyr Trp
 275 280 285
 Met Pro Leu Ser Phe Cys Ile Ile Ile Leu Gly Gly Val Leu Asn Ser
 290 295 300
 Leu Arg Asn Arg Lys
 305

<210> 7221
 <211> 321
 <212> PRT
 <213> B.fragilis

<400> 7221

Arg Ser Tyr Leu Glu Tyr Asp Asn Leu Tyr Leu Ile Lys Arg Phe Ser
 1 5 10 15
 Ile Pro Tyr Ser Asn Ile Leu Phe Tyr Leu Tyr Glu Glu Lys Val Phe
 20 25 30
 Ile Leu Asn Glu Ile Ile Glu Leu Met Asn Asn Leu Leu Ser Ile Phe
 35 40 45
 Ile Pro Thr Tyr Asn Arg Cys Asn Val Leu Asp Thr Val Leu Asp Arg
 50 55 60
 Val Ile Ser Ser Val Lys Glu Tyr Asp Val Cys Val Gln Val Tyr Asp
 65 70 75 80
 Asn Cys Ser Leu Asp Lys Thr Glu Asn Ile Val Cys Ala Lys Gln Lys
 85 90 95
 Leu Tyr Pro Tyr Ile Phe Tyr Cys Lys Asn Glu Thr Asn Ile Gly Leu
 100 105 110
 Asp Arg Asn Met Leu Asn Val Leu Asn Lys Gln Val Ser Lys Tyr Thr
 115 120 125
 Leu Met Leu Gly Asp Asp Asp Phe Leu Val Asp Asp Phe Tyr Lys Lys
 130 135 140
 Ile Glu Ser Tyr Leu Lys Gln Cys Phe Asp Phe Ile Val Leu Ser Val
 145 150 155 160
 Asp Ser Thr Phe Lys Thr Thr Val Tyr Val Glu Lys Leu Ser Ala Phe
 165 170 175
 Ser Phe Leu Trp Asp Lys Met Pro Tyr Gly Thr Val Ile Ile Arg Asn
 180 185 190
 Gly Leu Ile Asn Arg Cys Asp Val Glu Lys Tyr Ile Gly Thr Ser His
 195 200 205
 Ala Tyr Ser Ala Ile Pro Trp Glu Ser Met Leu Ser Ser Asn Ala Ile
 210 215 220
 Gly Lys Cys Leu Phe Tyr Ser Asp Tyr Ile Leu Val Glu Leu Gly Glu
 225 230 235 240
 Ile Glu Lys Thr Trp Lys Ser Asn Ala Ile Asp Ile Phe Met Tyr Gln
 245 250 255
 Ile Pro Leu Trp Phe Ser Ile Leu Pro Glu Gln Tyr Ile Met Lys Asn
 260 265 270
 Lys Ile Tyr Arg Gly Tyr Met Arg Asn Leu Phe Ser Leu Arg Asn Ile
 275 280 285
 Trp Ser Leu Tyr Arg Arg Tyr Asn Phe Lys Ser Leu Ser Ser Met Arg
 290 295 300
 Phe Leu Ser Asn Ile Asn Lys Phe Lys Phe Val Leu Ile Ser Arg Leu
 305 310 315 320
 Gln

<210> 7222

<211> 316
 <212> PRT
 <213> B.fragilis

<400> 7222

Leu Met Tyr Tyr Leu Ile Ile Leu Val Leu Leu Phe Leu Ala Glu Leu
 1 5 10 15
 Phe Tyr Phe His Ile Ala Asp Lys Tyr Asn Ile Ile Asp Lys Pro Asn
 20 25 30
 Glu Arg Ser Ser His Thr Arg Ile Thr Leu Arg Gly Gly Gly Ile Ile
 35 40 45
 Phe Tyr Leu Gly Ala Leu Ala Tyr Phe Leu Thr Asn Gln Phe Glu Tyr
 50 55 60
 Pro Trp Phe Met Leu Ala Leu Thr Leu Val Thr Val Ile Ser Phe Val
 65 70 75 80
 Asp Asp Ile Arg Ser Ile Ser Gln Gly Leu Arg Leu Val Phe His Phe
 85 90 95
 Thr Ala Met Gly Leu Met Phe Tyr Gln Trp Glu Leu Phe Thr Leu Pro
 100 105 110
 Trp Trp Thr Val Val Val Ala Leu Ile Ala Cys Thr Gly Ile Ile Asn
 115 120 125
 Ala Tyr Asn Phe Met Asp Gly Ile Asn Gly Ile Thr Gly Gly Tyr Ser
 130 135 140
 Leu Val Val Leu Gly Ser Leu Ala Phe Ile Asn His Trp Val Val Ser
 145 150 155 160
 Phe Val Glu Pro Gly Leu Ile Tyr Thr Met Leu Cys Ala Val Leu Val
 165 170 175
 Phe Asn Phe Phe Asn Phe Arg Lys Arg Ala Lys Cys Phe Ala Gly Asp
 180 185 190
 Val Gly Ser Val Ser Ile Ala Phe Ile Ile Leu Phe Leu Ile Gly Lys
 195 200 205
 Leu Ile Ile Asp Thr Glu Asp Phe Ser Trp Ile Val Leu Leu Ala Val
 210 215 220
 Tyr Gly Ala Asp Ser Val Leu Thr Ile Val His Arg Leu Met Leu His
 225 230 235 240
 Glu Asn Ile Gly Leu Pro His Arg Lys His Leu Tyr Gln Ile Met Ala
 245 250 255
 Asn Glu Leu Lys Ile Pro His Val Ala Val Ser Leu Thr Tyr Met Val
 260 265 270
 Val Gln Gly Val Val Val Ala Gly Tyr Leu Val Leu Arg Glu Tyr Gly
 275 280 285
 Tyr Val Tyr Leu Ala Gly Ser Ile Leu Leu Leu Ser Ile Leu Tyr Leu
 290 295 300
 Leu Phe Met Lys Arg Phe Phe His Leu His Gln Phe
 305 310 315

<210> 7223
 <211> 320
 <212> PRT
 <213> B.fragilis

<400> 7223

Met Asn Ile Leu Ile Ser Gly Ile Cys Gly Phe Val Gly Thr Asn Leu
 1 5 10 15
 Ile Lys Val Leu Lys Lys Val His Thr Leu Tyr Gly Leu Asp Ile Ile
 20 25 30
 Asp Val Glu Lys Gln Met Asp Ile Lys Arg Phe Ser Trp Thr Glu Phe
 35 40 45
 Glu Pro Ser Ala Phe Pro Leu Gln Thr Leu Pro Lys Phe Asp Val Ile

50		55		60
Ile His Leu Ala Gly	Lys Ala His Asp Thr	Lys Lys Gln Ser Ala Ala		
65	70	75	80	
Gln Ser Tyr Phe Asp	Ile Asn Thr Gly Leu Thr	Gln Lys Ile Phe Asp		
	85	90	95	
Phe Phe Leu Glu Ser	Ser Ala Lys Lys Phe Ile	Phe Phe Ser Ser Val		
	100	105	110	
Lys Ala Ala Asp Ser	Val Val Gly Asp Val	Leu Thr Glu Asp Val		
	115	120	125	
Ile Pro Thr Pro Val	Gly Pro Tyr Gly Glu Ser	Lys Ile Gln Ala Glu		
	130	135	140	
Glu Tyr Ile Lys Lys	His Phe Thr Phe Ser	Asn Thr Asp Lys Gln Val		
145	150	155	160	
Tyr Ile Leu Arg Pro	Cys Met Ile His Gly	Pro Gly Asn Lys Gly Asn		
	165	170	175	
Leu Asn Leu Leu Tyr	Asn Val Val Lys Lys	Gly Ile Pro Trp Pro Leu		
	180	185	190	
Gly Asp Phe Glu Asn	Arg Arg Ser Phe Thr	Ser Ile Asp Asn Leu Cys		
	195	200	205	
Tyr Val Ile Glu Gly	Leu Leu Thr Lys Asp	Val Pro Ser Gly Ile Tyr		
	210	215	220	
His Met Gly Asp Asp	Glu Ala Leu Ser Thr	Asn Glu Leu Ile Ala Ile		
225	230	235	240	
Met Cys Glu Val Met	Gly Lys Gln Pro His	Ile Trp Lys Met Asn Lys		
	245	250	255	
Arg Phe Met Glu Gly	Cys Ala Gly Leu Gly	Thr Leu Leu His Leu Pro		
	260	265	270	
Leu Asn Thr Glu Arg	Leu Arg Lys Leu Thr	Glu Asn Tyr Val Val Ser		
	275	280	285	
Asn Thr Lys Ile Lys	Val Ala Leu Gly Ile	Asp Lys Met Pro Val Thr		
	290	295	300	
Ala Lys Glu Gly Leu	Ile Lys Thr Ile Arg	Ser Phe Glu Glu Thr Glu		
305	310	315	320	

<210> 7224

<211> 253

<212> PRT

<213> B.fragilis

<400> 7224

Lys Val Ile Tyr Tyr	Phe Met Asp Lys Ser	Gly Ala Asp Pro Leu Phe
1	5	10
Ser Ile Ile Thr Val	Ser Tyr Asn Ala Lys	Glu Ser Ile Glu Asp Thr
	20	25
Ile Asn Ser Ile Val	Asn Gln Thr Tyr Ser	Asn Phe Glu Tyr Ile Ile
	35	40
Val Asp Gly Gly Ser	Thr Asp Gly Thr Leu	Asp Ile Ile Arg Lys Tyr
	50	55
Glu Asp Lys Ile Ser	Tyr Trp Ile Ser Glu	Pro Asp Asn Gly Ile Tyr
65	70	75
Asp Ala Met Asn Lys	Gly Leu Ala Ile Cys	Lys Gly Glu Trp Ile Asn
	85	90
Phe Met Asn Ser Gly	Asp Leu Phe Tyr Asn	Asp His Val Leu Val Asp
	100	105
Ile Tyr Arg Tyr Cys	Asp Phe Lys Lys Phe	His Ile Leu Tyr Gly Lys
	115	120
Thr Val Val Lys Glu	Thr Gly Arg Val Ile	Val Pro Pro Leu Lys Ile
	130	135
Arg Lys Lys Tyr Phe	Leu Leu Asp Thr Ile	Cys His Gln Ser Ile Phe

145 150 155 160
 Phe Asn Arg Ser Ile Phe Met Asp Leu Gly Thr Tyr Ser Leu Asp Tyr
 165 170 175
 Lys Ile Ile Ala Asp Arg Asp Leu Leu Leu Lys Ser Ile Ile Asn Glu
 180 185 190
 Lys Arg Phe Leu Tyr Val Asp Val Val Val Ser Leu Trp Glu Ser Leu
 195 200 205
 Gly Phe Ser Gly Asn Asn Leu Lys Leu Phe Lys Asn Glu Glu Lys Leu
 210 215 220
 Leu Val Asn Arg Asn Phe Asn Thr Val Glu Ile Tyr Phe Ile Arg Ile
 225 230 235 240
 Asn Tyr Lys Phe Arg Gln Phe Leu Asn Lys Leu Lys Leu
 245 250

<210> 7225
 <211> 239
 <212> PRT
 <213> B.fragilis

<400> 7225
 Arg Ala Phe His Arg Gly Arg Ser Phe Leu Ile Ser Ala Phe Ala Met
 1 5 10 15
 Ala Leu Leu Arg Glu Tyr Lys Glu Ile Ala Tyr Gln Trp Gly Ile Trp
 20 25 30
 Lys Thr Glu Glu Ser Pro Glu Glu Leu Leu Ala Leu Leu Pro Asp Pro
 35 40 45
 Glu Arg Tyr Glu Gln Gln Leu Thr Arg Phe Ser Ser Pro His Arg Lys
 50 55 60
 Leu Glu Trp Leu Ser Val Arg Val Leu Leu Tyr Gln Leu Leu Gly Glu
 65 70 75 80
 Glu Lys Thr Ile Glu Tyr Ala Pro Ser Gly Lys Pro His Leu Ala Asp
 85 90 95
 Ser Ser Tyr Phe Ile Ser Ile Ser His Thr Arg Gly Tyr Val Ala Val
 100 105 110
 Ile Leu Ser Pro Val Ser Glu Val Gly Ile Asp Ile Glu Gln Tyr Gly
 115 120 125
 Gln Arg Val His Lys Val Ala His Lys Tyr Met Arg Pro Asp Glu Leu
 130 135 140
 Ile Ser Glu Tyr Gln Gly Glu Asp Thr Trp Ser Leu Leu Leu His Trp
 145 150 155 160
 Ser Ala Lys Glu Val Met Phe Lys Cys Met Asp Thr Ser Glu Val Asp
 165 170 175
 Phe Arg Glu His Leu Arg Ile Met Pro Phe Gln Val Cys Glu His Gly
 180 185 190
 Glu Phe Pro Ala Glu Glu Tyr Arg Thr Glu His Lys Lys Lys Phe Met
 195 200 205
 Ile Arg Tyr Leu Leu His Pro Asp Phe Val Met Thr Trp Gln Val Thr
 210 215 220
 Ser Ala Tyr Ser Val Asn Glu Cys Asp Ile Met Lys Lys Met Gln
 225 230 235

<210> 7226
 <211> 404
 <212> PRT
 <213> B.fragilis

<400> 7226
 Thr Thr Ile His Gln Lys Glu Ser Gly Lys Ser Arg Cys Ser Ser Val
 1 5 10 15

Glu Asn Gly Ser Arg Tyr Ile Ala Trp Ile Phe Ser Asp His Phe Phe
 20 25 30
 Ser Tyr Leu Phe Ile Lys Leu Asn Phe Ala Ile Met Lys Lys Leu Met
 35 40 45
 Phe Leu Val Ala Ala Ser Leu Phe Val Phe Ala Ala Cys Ser Ser Glu
 50 55 60
 Asp Asp Ser Ser Pro Glu Val Asn Pro Glu Asn Ala Ala Ile Thr Phe
 65 70 75 80
 Glu Leu Ser Ala Val Asn Gly Leu Thr Asp Gly Ile Gly Thr Arg Met
 85 90 95
 Pro Val Tyr Ser Gln Glu Ala Thr Gln His Val Thr Arg Val Ser Val
 100 105 110
 Tyr Ala Phe Val Gln Asn Gly Ser Thr Tyr Leu His Gln Lys Thr Tyr
 115 120 125
 Asp Ile Thr Gly Trp Thr Asp Gly Thr Thr Phe Lys Arg Phe Ala Val
 130 135 140
 Pro Asp Ala Asp Lys Leu Pro Val Gly Val Tyr Lys Phe Leu Ala Val
 145 150 155 160
 Gly Arg Asp Ala Thr Asp Arg Phe Ser Val Thr Thr Pro Thr Ser Gly
 165 170 175
 Asn Thr Asn Tyr Thr Asp Met Leu Ala Ser Ile Val Asn Ser Gly Asp
 180 185 190
 Glu Ser Glu Ile Phe Ala Gly Ser Ala Asp Ala Glu Val Met Ala Gln
 195 200 205
 Gly Gly Thr Arg Val Ser Ile Glu Met Thr Arg Lys Val Ala Gly Val
 210 215 220
 Leu Gly Tyr Phe Lys Asn Val Pro Gln Val Leu Asn Gly Ser Thr Val
 225 230 235 240
 Lys Tyr Leu Arg Leu Lys Val Ser Asn Ser Asn Gln Gln Val Asn Leu
 245 250 255
 Thr Asn Gly Val Gly Ile Asn Thr Ala Pro Thr Pro Tyr Asn Ile Ile
 260 265 270
 Asp Met Asp Leu Ser Gly Gln Ala Val Ser Asn Gly Val Tyr Val Gly
 275 280 285
 Asn Asp Leu Ser Gly Gln Gly Val Val Lys Val Pro Asn Ser Gln Leu
 290 295 300
 Gly Gly Ser Phe Tyr Ile Pro Val Ser Gly Val Ser Met Thr Leu Gly
 305 310 315 320
 Leu Tyr Asp Ala Ser Gly Val Ala Ile Lys Glu Trp Thr Val Ser Asp
 325 330 335
 Thr Asn Ser Ser Gly Ala Thr Gln Phe Asn Leu Met Ala Asn His Phe
 340 345 350
 Tyr Ser Leu Gly Val Lys Gly Ala Thr Gly Ser Val Asp Gly Gly Thr
 355 360 365
 Pro Gly Asn Pro Gly Asp Asp Asp Ala Pro Val Asp Leu Leu Thr Asp
 370 375 380
 Gln Asn Ile Val Ile Thr Ile Ser Pro Ala Trp Glu Leu Ile His Asn
 385 390 395 400
 Leu Val Ile Gln

<210> 7227

<211> 453

<212> PRT

<213> B.fragilis

<400> 7227

Leu Lys Thr Asn Ile Leu Asp Pro Asp Ala Tyr Leu Cys Gln Leu Ala
 1 5 10 15

Glu Ile Phe Asn Gly Ile Ser Val Asn Thr Pro Ser Leu Ser Ala Ile
 20 25 30
 Ile Ala Ile Ile Leu Ala Gly Leu Leu Leu Leu Ala Ser Gly Phe Ala
 35 40 45
 Ser Ala Ser Glu Ile Ala Phe Phe Ser Leu Ser Pro Ser Asp Leu Asn
 50 55 60
 Asp Ile Glu Glu Gly Asn His Pro Ser Asp Gly Lys Ile Ser Asn Leu
 65 70 75 80
 Leu Ala Asp Ser Glu Arg Leu Leu Ala Thr Ile Leu Ile Thr Asn Asn
 85 90 95
 Phe Val Asn Val Thr Ile Ile Met Leu Cys Asn Phe Phe Phe Met Asn
 100 105 110
 Val Phe Val Phe His Ser Pro Leu Ala Glu Phe Leu Ile Leu Thr Val
 115 120 125
 Ile Leu Thr Phe Leu Leu Leu Leu Phe Gly Glu Ile Met Pro Lys Ile
 130 135 140
 Tyr Ser Ala Gln Lys Thr Leu Ala Phe Cys Arg Phe Ser Ala Pro Val
 145 150 155 160
 Ile Tyr Val Leu Arg Lys Val Phe Ala Pro Ile Ser Ala Val Leu Val
 165 170 175
 His Ser Thr Ala Phe Leu Asn Lys His Phe Ala Lys Lys Asn His Asn
 180 185 190
 Ile Ser Val Asp Glu Leu Ser His Ala Leu Glu Leu Thr Asp Lys Ala
 195 200 205
 Glu Leu Thr Glu Glu Asn Asn Ile Leu Glu Gly Ile Ile Arg Phe Gly
 210 215 220
 Gly Glu Thr Ala Lys Glu Val Met Thr Ser Arg Leu Asp Val Val Asp
 225 230 235 240
 Leu Asp Ile Arg Thr Pro Phe Lys Asp Val Ile Gln Cys Ile Ile Asp
 245 250 255
 Asn Ala Tyr Ser Arg Ile Pro Ile Tyr Ser Gly Thr Arg Asp Asn Ile
 260 265 270
 Lys Gly Val Leu Tyr Ile Lys Asp Leu Leu Pro His Leu Asn Lys Gly
 275 280 285
 Asp Asn Phe Arg Trp Gln Ser Leu Ile Arg Pro Ala Tyr Phe Val Pro
 290 295 300
 Glu Thr Lys Met Ile Asp Asp Leu Leu Arg Asp Phe Gln Ala Asn Lys
 305 310 315 320
 Ile His Ile Ala Ile Val Val Asp Glu Phe Gly Gly Thr Ser Gly Ile
 325 330 335
 Val Thr Met Glu Asp Ile Ile Glu Glu Ile Val Gly Glu Ile His Asp
 340 345 350
 Glu Tyr Asp Asp Glu Glu Arg Thr Tyr Thr Val Ile Asn Asp His Thr
 355 360 365
 Trp Val Phe Glu Ala Lys Thr Gln Leu Thr Asp Phe Tyr Lys Ile Thr
 370 375 380
 Lys Val Asp Glu Asp Asp Phe Asp Lys Val Asp Gly Asp Ala Asp Thr
 385 390 395 400
 Leu Ala Gly Leu Leu Leu Glu Ile Lys Gly Glu Phe Pro Ala Leu His
 405 410 415
 Glu Lys Val Leu Tyr His Arg Tyr Glu Phe Glu Val Leu Ala Met Asp
 420 425 430
 Ser Arg Arg Ile Leu Lys Val Lys Phe Thr Val Asn Glu Pro Ser Thr
 435 440 445
 Glu Glu Glu Ala Ser
 450

<210> 7228

<211> 64

<212> PRT

<213> B.fragilis

<400> 7228

Leu	His	Lys	Asn	Ile	Lys	Ser	Asp	Ile	Asp	Leu	Asn	Ile	Gly	Tyr	Asn
1			5						10					15	
Asn	Ala	Gln	Arg	Asn	Lys	Leu	Tyr	Thr	Lys	Ile	Asn	Ile	Phe	Lys	Ile
		20						25					30		
Arg	Met	Ile	Glu	Arg	Asp	Gln	Tyr	Ile	Ile	Thr	Tyr	Leu	Gln	Gln	Asp
		35					40					45			
Asn	Ser	Glu	Asn	Gly	Thr	Ile	Tyr	Pro	Leu	Asn	Thr	Ser	Ser	Asn	Ile
	50					55					60				

<210> 7229

<211> 370

<212> PRT

<213> B.fragilis

<400> 7229

Leu	Asn	Glu	Asn	Asp	Tyr	Phe	Cys	Ala	Arg	Ile	Lys	Leu	Thr	Lys	Ser
1			5						10					15	
Arg	Ile	Arg	Pro	Lys	Ser	Met	Asn	Arg	Asn	Phe	Ser	Asn	Ala	Ile	Glu
		20						25					30		
Asn	Trp	Tyr	Lys	Glu	Tyr	Lys	Arg	Glu	Leu	Pro	Trp	Arg	Asp	Ser	Ala
		35					40					45			
Asp	Pro	Tyr	Val	Ile	Trp	Ile	Ser	Glu	Ile	Ile	Leu	Gln	Gln	Thr	Arg
	50					55					60				
Val	Val	Gln	Gly	Tyr	Asp	Tyr	Phe	Val	Arg	Phe	Met	Lys	Arg	Phe	Pro
65				70					75						80
Asp	Val	Ala	Thr	Leu	Ala	Glu	Ala	Asp	Glu	Asp	Glu	Val	Met	Lys	Tyr
			85					90					95		
Trp	Gln	Gly	Leu	Gly	Tyr	Tyr	Ser	Arg	Ala	Arg	Asn	Leu	His	Ala	Ala
			100					105					110		
Ala	Lys	Ser	Met	Asn	Gly	Val	Phe	Pro	Lys	Thr	Tyr	Pro	Glu	Val	Arg
		115					120					125			
Ala	Leu	Lys	Gly	Val	Gly	Glu	Tyr	Thr	Ala	Ala	Ala	Ile	Cys	Ser	Phe
	130					135					140				
Ala	Tyr	Asn	Met	Pro	Tyr	Ala	Val	Val	Asp	Gly	Asn	Val	Tyr	Arg	Val
145				150					155						160
Leu	Ser	Arg	Tyr	Leu	Gly	Ile	Asp	Thr	Pro	Ile	Asp	Ser	Thr	Glu	Gly
			165					170					175		
Lys	Lys	Leu	Phe	Ala	Ala	Val	Ala	Asp	Glu	Leu	Leu	Asp	Arg	Lys	Asn
		180					185						190		
Pro	Ala	Leu	Tyr	Asn	Gln	Ala	Ile	Met	Asp	Phe	Gly	Ala	Ile	Gln	Cys
		195				200						205			
Ser	Pro	Gln	Thr	Pro	Asn	Cys	Met	Phe	Cys	Pro	Leu	Ala	Asp	Ser	Cys
	210				215						220				
Ala	Ala	Leu	Ala	Lys	Gly	Thr	Val	Ala	Glu	Leu	Pro	Val	Lys	Gln	His
225				230					235					240	
Lys	Ile	Lys	Thr	Thr	Asn	Arg	Tyr	Phe	Asn	Tyr	Ile	Tyr	Val	Arg	Met
			245					250						255	
Gly	Val	His	Thr	Phe	Ile	Asn	Lys	Arg	Thr	Gly	Asn	Asp	Ile	Trp	Arg
		260					265						270		
Asn	Leu	Phe	Glu	Leu	Pro	Leu	Ile	Glu	Thr	Pro	Val	Ala	Val	Ser	Glu
		275				280						285			
Glu	Glu	Phe	Leu	Ala	Leu	Pro	Glu	Leu	Lys	Ala	Leu	Phe	Ala	Pro	Lys
	290					295					300				
Glu	Leu	Pro	Val	Val	Arg	Ser	Val	Cys	Arg	Asp	Val	Lys	His	Val	Leu
305					310					315					320

Ser His Arg Val Ile Tyr Ala Asn Phe Tyr Ile Val Asp Leu Pro Glu
 325 330 335
 Asp Ser His Ser Phe Ala Ala Tyr Gln Lys Ile Lys Ala Glu Glu Leu
 340 345 350
 Glu Gln Tyr Ala Val Ser Lys Leu Val His Ala Phe Ile Glu Lys Tyr
 355 360 365
 Ile Asp
 370

<210> 7230
 <211> 156
 <212> PRT
 <213> B.fragilis

<400> 7230
 Asn Ser Glu Asn Met Ser Val Asn Lys Val Ile Leu Ile Gly Asn Val
 1 5 10 15
 Gly Lys Asp Pro Glu Val Arg Tyr Leu Asp Thr Gly Ile Ala Val Ala
 20 25 30
 Ser Phe Pro Leu Ala Thr Thr Asp Arg Ala Tyr Thr Leu Ser Asn Gly
 35 40 45
 Thr Gln Val Pro Glu Arg Thr Glu Trp His Asn Leu Val Leu Trp Arg
 50 55 60
 Gly Leu Ala Glu Thr Ala Glu Lys Tyr Val His Lys Gly Asp Lys Leu
 65 70 75 80
 Tyr Val Glu Gly Lys Ile Arg Thr Arg Ser Tyr Asp Asp Gln Asn Gly
 85 90 95
 Ala Lys Arg Tyr Val Thr Glu Ile Phe Val Asp Asn Met Glu Met Leu
 100 105 110
 Thr Pro Lys Gly Thr Gly Ser Gly Ser Tyr Ala Pro Ala Gln Gln Gln
 115 120 125
 Thr Ala Ala Pro Val Arg Pro Gln Ser Gln Gln Pro Gln Gln Pro Val
 130 135 140
 Ser Ser Gln Asp Asn Ser Ala Asp Asp Leu Pro Phe
 145 150 155

<210> 7231
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 7231
 Ser Ile Asn Leu Thr Gln Asn Ala Ile Ile Thr Arg Lys Ala Val Ile
 1 5 10 15
 Val Arg Ser Leu Leu Asn Ile Cys Ser Thr Phe Lys Ser Arg Phe His
 20 25 30
 Leu Ile Lys Gln Leu Ile Ile Lys Asp Ile Thr Asn Ile Thr Glu Lys
 35 40 45
 Ile Ser Ala Glu Tyr Thr Tyr Asp Val Leu Thr Asn Phe Leu Glu Tyr
 50 55 60
 Ser Ile Leu Phe Thr Ala Lys Asp Ser Val Asn Leu Phe Phe Asn Pro
 65 70 75 80
 Phe Pro Ile Pro Ile Ser Asn Lys Leu Asn His Glu Thr Ser Ser Pro
 85 90 95
 Arg Gly Trp Lys Asp Gln Arg Trp Ser
 100 105

<210> 7232
 <211> 77

<212> PRT

<213> B.fragilis

<400> 7232

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Leu Ile Ala Asp Phe Ile Ala Ser Ser Met Tyr Ser Ser Leu Leu Tyr
1           5           10           15
Thr Gly Ile Thr Ile Asp Thr Lys Gly Leu Val Thr Ser Ala Phe Ile
          20           25           30
Tyr Tyr Cys Asn Leu Leu Ile Asn Thr Asn Leu Asn Leu Ile Phe
          35           40           45
Asp Lys Asn Arg Ile Leu Leu Lys Leu Leu Lys Leu Tyr Arg Leu Tyr
          50           55           60
Lys Asp Gln Ile Phe Leu Lys Glu Lys Arg Phe Leu Ile
65           70           75

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<210> 7233

<211> 781

<212> PRT

<213> B.fragilis

<400> 7233

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Tyr Tyr Glu Glu Asn Ala Met Ile Lys Arg Ile Leu Leu Leu Ala Ile
1           5           10           15
Val Ile Gly Gly Gly Met Thr Thr Val Ala Gln Asn Ser Ile Asp Thr
          20           25           30
Leu Phe Met Ser Val Ser Gln Arg Leu Ser Gly His Pro Ser Glu Leu
          35           40           45
Ile Tyr Leu Gln Thr Gly Lys Asp Ile Tyr Glu Thr Gly Glu Asp Leu
          50           55           60
Trp Phe Lys Ala Tyr Gln Leu Asp Ala Lys Ser Phe Ala Leu Ser Glu
65           70           75           80
Gln Ser Glu Thr Leu Tyr Leu Gln Met Leu Asn Asp Lys Asp Ser Val
          85           90           95
Val Trp Ala Glu Lys Tyr Pro Ile Glu Lys Gly Ile Ala Glu Gly His
          100          105          110
Val Tyr Ile Asp Thr Lys Leu Ser Glu Gly Asn Tyr Arg Leu Gly Thr
          115          120          125
Tyr Thr Arg His Ser Tyr Tyr Asn Asp Thr Thr Gly Ile Ser Pro Glu
          130          135          140
Arg Lys Ile Arg Ile Val Arg Asn Ile Ala Leu Asp Ser Leu Pro Glu
145          150          155          160
His Arg Glu Lys Pro Gly Glu Phe Arg Phe Asn Leu Phe Pro Glu Gly
          165          170          175
Gly Asn Leu Val Ser Gly Leu Pro Phe Arg Leu Ala Phe Lys Ala Thr
          180          185          190
Gly Ser Gly Gly Cys Pro Val Asp Val Glu Gly Thr Leu Tyr Gln Asp
          195          200          205
Glu Ile Pro Val Leu Ser Phe Lys Ser Ser His Asp Gly Met Gly Val
          210          215          220
Ile Pro Phe Thr Pro Ser Ser Gly Lys Glu Tyr Arg Ile Glu Leu Ala
225          230          235          240
Asn Gly Tyr Ser Tyr Ala Leu Pro Glu Ile Tyr Arg Gln Gly Met Gly
          245          250          255
Leu Arg Leu Ser Gly Arg Asp Gly Lys Gln Leu Glu Phe Leu Ile Ser
          260          265          270
Gln Thr Glu Gly Leu Ser Asp Gln Glu Val Tyr Leu Val Gly Gln Ile
          275          280          285
Arg Gly Thr Val Cys Cys Val Ala Lys Gly Leu Leu Lys Asp Arg Leu
290          295          300

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Lys Met Lys Ile Pro Leu Ser Glu Phe Pro Tyr Gln Gly Ile Ala Glu
 305 310 315 320
 Phe Thr Leu Phe Asn Ala Ala Met Gln Pro Val Ala Glu Arg Leu Val
 325 330 335
 Tyr Val His Pro Glu Lys Lys Leu His Ile Asp Ile Val Thr Glu Lys
 340 345 350
 Glu Ser Tyr Val Leu Arg Glu Lys Ala Ala Leu Lys Val Lys Val Thr
 355 360 365
 Asp Asp Asn Gly Gln Pro Val Lys Ala Asp Leu Gly Ile Ser Val Phe
 370 375 380
 Asp Lys Ala Tyr Ser Asn Pro Asp Asp Arg Val Asn Met Leu Ala Tyr
 385 390 395 400
 Cys Tyr Leu Ser Ser Gln Ile Arg Gly Ala Val Cys Arg Pro Ala Tyr
 405 410 415
 Tyr Phe Asp Glu Lys Asn Ala Asp Arg Met Gln Ala Met Asp Leu Leu
 420 425 430
 Leu Leu Thr Gln Gly Trp Arg Arg Tyr Val Trp Glu Leu Asn Gly Ala
 435 440 445
 Val Arg His Gly Glu Met Phe Leu Arg Asp Asp Val Thr Gly Ile Gln
 450 455 460
 Thr Leu Gly Ser Lys Lys Ser Lys Gly Thr Gly Gly Ala Lys Gln
 465 470 475 480
 Leu Ile Gln Val Ser Gly Ala Glu Gly Asn Ser Thr Tyr Leu Met Thr
 485 490 495
 Asp Ser Leu Gly Arg Phe Thr Val Asp Thr Asp Leu Met Lys Thr Leu
 500 505 510
 Arg Gly Gly Tyr Val Tyr Leu Lys Pro Met Leu Ser Lys Glu Phe Lys
 515 520 525
 Pro Glu Leu Glu Ile Gln Asp Tyr Phe Pro Ala Ile Asp Ser Ile Arg
 530 535 540
 Arg Lys Lys Ser Phe Asp Cys Ser Leu Ile Asn Cys Thr Gln Arg Pro
 545 550 555 560
 Lys Glu Glu Ile Tyr Asp Ala Pro Val Val Ser Gly Asp Ser Thr Ile
 565 570 575
 Leu Leu Asp Glu Val Val Ile Ala Arg Lys Ala Arg Lys Pro Phe Arg
 580 585 590
 Asp Lys Leu Met Gly Arg Leu Asp Ser Leu Ala Gln Met Asn Leu Asn
 595 600 605
 Ser Val Tyr Val Cys Thr Ser Cys Gly Leu Leu Leu Asn Tyr Asn Pro
 610 615 620
 Asp Tyr Gln Gly His His Ala Leu Val Gly Glu Gly Cys Pro Ala
 625 630 635 640
 Lys Gly Arg Lys Gln Pro Val Asp Gly Glu Thr Tyr Arg Ile Ala Lys
 645 650 655
 Tyr Lys Tyr Tyr Gly Asp Ala Lys Gly Gly Gly Val Tyr Phe Ser Val
 660 665 670
 Val Asp Ala His Ser Val Val Tyr His Ala Ala Glu Phe Thr Glu Glu
 675 680 685
 Glu Leu Leu Arg Met Asn Asn Met Trp Arg Val Lys Gly Tyr Tyr Gly
 690 695 700
 Lys Arg Glu Phe Tyr Gln Pro Asp Glu Ile Asp Met Gln Leu Pro Val
 705 710 715 720
 Pro Asp Ala Arg Asn Thr Leu Leu Trp Ala Pro Ser Val Val Thr Asp
 725 730 735
 Glu Lys Gly Glu Ala Thr Val Ser Phe Tyr Cys Ser Asp Ile Asn Thr
 740 745 750
 Gly Phe Ile Gly Val Ala Glu Gly Val Asp Gly Thr Gly Leu Leu Gly
 755 760 765
 Thr Asp Gln Cys Glu Phe Arg Val Ile Arg Arg Ala Asp

770

775

780

<210> 7234
 <211> 262
 <212> PRT
 <213> B.fragilis

<400> 7234

Asn	His	Ile	Phe	Ser	Phe	Ile	Ala	Met	Asn	Pro	Ile	Leu	Ser	Phe	Ile
1				5					10					15	
Ile	Ile	Glu	Tyr	His	Ser	Phe	Asp	Asp	Ile	Val	Glu	Cys	Ile	Ala	Thr
		20					25					30			
Ile	Arg	Ser	Ser	Thr	Ser	Leu	Ser	Tyr	Glu	Val	Ile	Val	Ser	Ser	Asn
	35					40					45				
Ser	Cys	Tyr	Leu	Leu	Glu	Val	Gln	Glu	Arg	Ile	Leu	Lys	Lys	Met	Glu
	50				55				60						
His	Val	Lys	Trp	Val	Phe	Asn	Ser	Lys	Asn	Gly	Gly	Phe	Ala	Tyr	Ala
65				70					75					80	
Met	Asn	Arg	Gly	Ile	Glu	Lys	Ala	Val	Gly	Asp	Phe	Leu	Val	Ile	Met
			85						90					95	
Asn	Pro	Asp	Val	Arg	Ile	Lys	Tyr	Gly	Ile	Glu	Tyr	Met	Phe	Asp	Phe
		100					105						110		
Leu	Tyr	Phe	Asn	Glu	Gln	Val	Gly	Ile	Val	Ser	Pro	Lys	Ile	Val	Asn
		115				120						125			
Ser	Leu	Gly	Glu	Val	Gln	Asp	Ser	Phe	Arg	Lys	Phe	Leu	Thr	Pro	Ser
	130					135					140				
Asn	Phe	Ile	Leu	Arg	Gln	Leu	Arg	Arg	Ile	Phe	Tyr	Arg	Arg	Asn	Glu
145				150					155					160	
Val	Ile	Thr	Met	Thr	Lys	Leu	Glu	Asn	Val	Asp	Trp	Val	Ile	Gly	Ala
			165						170					175	
Phe	Met	Met	Ile	Ser	Lys	Lys	Ala	Tyr	Glu	Ala	Val	Cys	Gly	Met	Asp
		180						185					190		
Glu	Lys	Tyr	Phe	Leu	Tyr	Cys	Glu	Asp	Met	Asp	Leu	Cys	Lys	Lys	Ile
	195					200						205			
His	Asp	Lys	Gly	Tyr	Lys	Val	Ile	Tyr	Tyr	Pro	Asp	Ala	Val	Val	Val
210					215					220					
Tyr	Glu	Gly	Thr	Arg	Ser	Ala	Arg	Lys	Ser	Leu	Lys	Tyr	Ala	Cys	Ile
225				230						235				240	
Phe	Leu	Ser	Ser	Leu	Leu	His	Tyr	Trp	Ser	Lys	Phe	Gly	Phe	Lys	Arg
			245						250					255	
Leu	Thr	Ser	Val	Phe	Gly										
			260												

<210> 7235
 <211> 110
 <212> PRT
 <213> B.fragilis

<400> 7235

Asn	Lys	Thr	Arg	Phe	Lys	Ser	Lys	Lys	Ile	Met	Thr	Glu	Asn	Tyr	Glu
1				5					10					15	
Leu	Ile	Asp	Asn	Glu	Glu	Lys	His	Gln	Tyr	Glu	Phe	His	Val	Glu	Gly
		20					25					30			
Tyr	Val	Pro	Arg	Ile	Glu	Tyr	Ile	Lys	Ser	Leu	Asn	Gly	Glu	Ile	Tyr
	35					40					45				
Leu	Thr	His	Thr	Glu	Val	Pro	Ala	Ala	Leu	Gly	Gly	His	Gly	Ile	Gly
	50				55					60					
Ser	Gln	Leu	Ala	Glu	Lys	Val	Leu	Thr	Asp	Ile	Glu	Arg	Gln	Gly	Leu
65					70					75				80	

Arg Leu Val Pro Leu Cys Pro Phe Val Ala Gly Tyr Ile His Lys His
 85 90 95
 Pro Glu Trp Lys Arg Ile Val Leu Arg Gly Ile His Ile Gln
 100 105 110

<210> 7236

<211> 318

<212> PRT

<213> B.fragilis

<400> 7236

Ile Lys Thr Met Asn Ile Leu His Asp Thr Cys Arg Leu Val Phe Val
 1 5 10 15
 Tyr Leu Gly Arg Leu Pro Glu Tyr Val Ile Tyr Ser Leu Lys Ile Asn
 20 25 30
 Ser Lys Tyr Asn Arg Ile Thr Leu Leu His Asp Cys Glu Ile Gln Asn
 35 40 45
 His Val Ala Asn Val Glu Tyr Ile Asn Ile Asp Asp Phe Tyr Asp Arg
 50 55 60
 Arg Gln Phe Val Asn Leu Ile Ala Glu Ser Pro Leu Lys Asn Phe Arg
 65 70 75 80
 Asp Gly Phe Trp Tyr Lys Thr Thr Glu Arg Phe Tyr Val Leu Arg Ser
 85 90 95
 Tyr Met Asp His Tyr Asn Val His Ala Ile Phe His Ala Glu Leu Asp
 100 105 110
 Asn Ile Val Tyr Asn Leu Glu Gly Val Ser Ile Ser Leu Asp Lys Ile
 115 120 125
 Gly Asn Gly Leu Phe Tyr Pro Ile Leu Asn Asn Lys Lys Ala Ala Ala
 130 135 140
 Ser Phe Met Tyr Ile Asn Ser Phe Ser Glu Leu Asp Ala Leu Ile Gly
 145 150 155 160
 Tyr Phe Asn Glu Gln Lys Thr Phe Lys Asp Asp Met Gln Leu Leu Ala
 165 170 175
 Glu Tyr Ala Ser Ala Ser Val Asn Val Phe Pro Leu Pro Ser Glu Asn
 180 185 190
 Ser Leu Cys Lys Met Pro Val Ser Asn Glu Val Gln Cys Ile Tyr Asp
 195 200 205
 Ala Ala Ser Ile Gly Gln Tyr Leu Leu Gly Ile Asp Phe Arg Asn Ala
 210 215 220
 Ser Arg Pro Ile Phe Asn Gly Phe Gln Asn Glu Asn Cys Ile Ile Asp
 225 230 235 240
 Leu Ser Gln Leu Lys Phe Ile Gln Asp Gly Asp Lys Gly Ile Leu Met
 245 250 255
 Phe Tyr Asp Gln Ala Ile Tyr Leu Leu Lys Asn Ile His Val His Ser
 260 265 270
 Lys Val Phe Lys Arg Met Tyr Leu Ser Glu Ser Tyr Val Pro Arg Ile
 275 280 285
 Met Lys Lys Ile Asn Gly Gly Lys Lys Ser Leu Met Ser Leu Asn Phe
 290 295 300
 Lys Asn Met Ile Lys Leu Phe Leu Asp Lys Ser Lys Leu Leu
 305 310 315

<210> 7237

<211> 61

<212> PRT

<213> B.fragilis

<400> 7237

Asn Val Ile Ile Phe Lys Asn Asn Ile Val Phe Ser Asn Ile Ser Arg

1		5		10		15									
Thr	Lys	Thr	Ile	Ser	Tyr	Lys	Lys	Thr	Ile	Ser	Leu	Glu	Tyr	Tyr	Asn
		20						25					30		
Ser	Arg	Tyr	Leu	Tyr	Asn	Lys	Lys	Ile	Asn	Thr	Lys	Arg	Lys	Asp	Phe
		35						40					45		
Arg	Lys	Met	Leu	Phe	Ile	Arg	Lys	Ser	Asn	Thr	Arg	Ser			
		50					55					60			

<210> 7238
 <211> 254
 <212> PRT
 <213> B.fragilis

<400> 7238															
Glu	Leu	Ile	Ile	Met	Leu	Tyr	Ser	Lys	Val	Ser	Ile	Ile	Thr	Ala	Ser
1				5					10					15	
Tyr	Asn	Ser	Glu	Ala	Thr	Leu	Glu	Ala	Thr	Ile	Glu	Ser	Val	Tyr	Asn
			20						25				30		
Gln	Thr	Tyr	Gln	Asp	Ile	Glu	Tyr	Ile	Ile	Ile	Asp	Gly	Gly	Ser	Ser
		35						40					45		
Asp	Lys	Thr	Val	Ser	Ile	Ile	Gln	Lys	Phe	Glu	Pro	Leu	Phe	Ser	Gly
	50					55					60				
Arg	Leu	Lys	Trp	Ile	Ser	Glu	Pro	Asp	Lys	Gly	Ile	Tyr	Asp	Ala	Trp
65					70					75					80
Asn	Lys	Gly	Leu	Glu	Ile	Ala	Thr	Gly	Glu	Trp	Ile	Ala	Phe	Leu	Gly
				85					90					95	
Ser	Asp	Asp	Ile	Tyr	Leu	Pro	Asp	Ser	Ile	His	Lys	Tyr	Met	Asn	Val
			100					105						110	
Leu	Ile	Ser	Lys	Lys	Cys	Val	Asn	Phe	Ile	Ser	Ser	Lys	Cys	Lys	Leu
		115					120						125		
Val	Asn	Ser	Glu	Leu	Lys	Thr	Leu	Met	Ile	Tyr	Gly	Lys	Pro	Trp	Gly
	130					135					140				
Lys	Leu	Met	Asn	Ser	Tyr	Cys	Cys	Ile	Ala	His	Val	Gly	Cys	Met	His
145					150					155					160
Lys	Arg	Cys	Leu	Phe	Asp	Asn	Tyr	Gly	Ser	Phe	Asn	Ser	Asp	Tyr	Lys
			165					170						175	
Ile	Ala	Gly	Asp	Tyr	Asp	Phe	Leu	Leu	Arg	Val	Lys	Asp	Val	Ile	Ile
		180						185					190		
Pro	Tyr	Tyr	Leu	Pro	Glu	Ile	Thr	Ala	Ile	Val	Gln	Asp	Gly	Gly	Ile
		195					200					205			
Ser	Asn	Arg	Asn	Ile	Leu	Lys	Val	Cys	Gly	Glu	Thr	Leu	Lys	Ile	Lys
	210					215					220				
Val	Ser	His	Lys	Thr	Lys	Asn	Leu	Tyr	Phe	Ser	Leu	Trp	Asp	Tyr	Cys
225					230					235					240
Val	Ala	Val	Phe	Lys	Tyr	Tyr	Val	Arg	Ser	Phe	Met	Ile	Lys		
			245					250							

<210> 7239
 <211> 526
 <212> PRT
 <213> B.fragilis

<400> 7239															
Ile	Ser	Lys	Ile	Met	Lys	Arg	Pro	Tyr	Leu	Leu	Leu	Ala	Cys	Leu	Ser
1				5					10					15	
Pro	Val	Ala	Cys	Leu	Met	Ala	Ala	Ser	Gly	Gln	Lys	Gly	Gly	Lys	Asn
		20						25					30		
Lys	Gln	Lys	Val	Asn	Asp	Arg	Gln	Leu	Pro	Asn	Val	Val	Phe	Ile	Tyr
		35					40					45			

Ala Asp Asp Leu Gly Tyr Gly Asp Leu Glu Cys Tyr Gly Ala Lys Asn
 50 55 60
 Val Gln Thr Pro Asn Val Asn Arg Leu Ala Ser Glu Gly Ile Arg Phe
 65 70 75 80
 Thr Asn Ala His Ala Thr Ala Ala Thr Ser Thr Pro Ser Arg Tyr Ser
 85 90 95
 Met Leu Thr Gly Glu Tyr Ala Trp Arg Arg Pro Gly Thr Asp Val Ala
 100 105 110
 Ala Gly Asn Ala Gly Met Ile Ile Arg Pro Glu Asp Tyr Thr Met Ala
 115 120 125
 Asp Met Phe Lys Asn Ser Gly Tyr Val Thr Ala Ala Leu Gly Lys Trp
 130 135 140
 His Leu Gly Leu Gly Asp Lys Ser Gly Glu Gln Asp Trp Asn Ala Pro
 145 150 155 160
 Leu Pro Ala Ala Leu Gly Asp Leu Gly Phe Asp Tyr Ser Tyr Ile Met
 165 170 175
 Ala Ala Thr Ala Asp Arg Val Pro Cys Val Phe Ile Glu Asn Gly Lys
 180 185 190
 Val Ala Asn Tyr Asp Pro Ser Ala Pro Ile Glu Val Ser Tyr Arg Lys
 195 200 205
 Pro Phe Glu Gly Glu Pro Leu Gly Lys Asp His Pro Glu Leu Leu Tyr
 210 215 220
 Asn Gln Lys His Ser His Gly His Asp Met Ala Ile Val Asn Gly Ile
 225 230 235 240
 Gly Arg Ile Gly Tyr Met Lys Gly Gly Gly Lys Ala Leu Trp Lys Asp
 245 250 255
 Glu Asn Ile Ala Asp Ser Ile Thr Thr His Ala Ile Asn Phe Ile Arg
 260 265 270
 Glu His Lys Asp Glu Pro Phe Phe Met Tyr Phe Ala Thr Asn Asp Val
 275 280 285
 His Val Pro Arg Phe Pro His Glu Arg Phe Arg Gly Lys Asn Pro Met
 290 295 300
 Gly Val Arg Gly Asp Ala Ile Val Gln Phe Asp Trp Ser Val Gly Gln
 305 310 315 320
 Ile Leu Glu Thr Leu Asp Lys Leu Gly Leu Ser Glu Asn Thr Leu Ile
 325 330 335
 Ile Leu Ser Ser Asp Asn Gly Pro Val Val Asp Asp Gly Tyr Gln Asp
 340 345 350
 Arg Ala Glu Leu Leu Asn Gly His Ser Pro Ala Gly Pro Leu Arg
 355 360 365
 Gly Asn Lys Tyr Ser Ala Phe Glu Gly Gly Thr Arg Ile Pro Ala Ile
 370 375 380
 Val Arg Trp Pro Lys Lys Ile Thr Gln Pro Gln Val Ser Asp Val Leu
 385 390 395 400
 Val Ser Gln Ile Asp Trp Leu Ala Ser Leu Ala Ser Leu Val Asp Ala
 405 410 415
 Arg Val Pro Lys Gly Ala Ala Pro Asp Ser Phe Asp Arg Leu Gly Asn
 420 425 430
 Trp Leu Gly Thr Asp Ser Thr Asp Arg Pro Trp Val Ile Glu Gln Ala
 435 440 445
 Ser Asn His Thr Leu Ser Val Arg Thr Lys Asp Trp Lys Tyr Ile Glu
 450 455 460
 Pro Asn Asp Gly Pro His Met Ile Thr Trp Gly Pro Lys Ile Glu Thr
 465 470 475 480
 Gly Asn Leu Ser Ile Pro Gln Leu Tyr Asp Met Thr Lys Asp Tyr Glu
 485 490 495
 Gln Glu Asn Leu Ala Glu Lys Asn Pro Ala Lys Leu Phe Glu Leu Gln
 500 505 510
 Thr Ile Leu Arg Lys Val Arg Asn Lys Thr Tyr Arg Ala Leu

515

520

525

<210> 7240
 <211> 299
 <212> PRT
 <213> B.fragilis

<400> 7240

Ile	Lys	Lys	Met	Glu	Ile	Asp	Leu	Val	Phe	Val	Thr	Lys	Ile	Asp	His
1				5					10					15	
Leu	Tyr	Val	Leu	Asn	Leu	Ala	Leu	Lys	Lys	Met	Val	Met	Leu	Asn	Asp
			20					25					30		
Ile	Arg	Ser	Val	Phe	Ile	Ile	Thr	Asn	Lys	Lys	Tyr	Phe	Lys	Tyr	Phe
	35						40					45			
Pro	Val	Arg	Lys	Asp	Ile	Lys	Ile	Asn	Leu	Ile	Asp	Glu	Asp	Ser	Val
	50					55					60				
Leu	Pro	Asp	Met	Thr	Leu	Asn	Gln	Leu	Ser	Lys	Leu	Ser	Leu	Pro	Phe
65					70					75				80	
Phe	Pro	Lys	Arg	Ser	Gly	Trp	Tyr	Phe	Gln	Gln	Phe	Leu	Lys	Leu	Gly
				85					90					95	
Ile	Ser	Lys	Leu	Asp	Asp	Leu	Ser	Glu	Asn	Tyr	Leu	Val	Leu	Asp	Ala
			100					105						110	
Asp	Thr	Ile	Phe	Leu	Gln	Arg	Ile	Pro	Leu	Phe	Asp	Asn	Gly	Arg	Phe
	115						120						125		
Val	Phe	Thr	Lys	Ala	Gln	Glu	Tyr	His	Lys	Pro	Tyr	Phe	Glu	Asn	Tyr
	130					135						140			
Ile	Asn	Leu	Leu	Lys	Glu	Ser	Pro	Ser	Arg	Glu	Phe	Ser	Phe	Ile	Ser
145					150					155					160
Gln	Tyr	Met	Leu	Phe	Asn	Lys	Asn	Ile	Val	Thr	Glu	Met	Leu	Asn	Lys
				165					170					175	
Ile	Glu	Ser	Asn	Phe	Asn	Phe	Glu	Asn	His	Trp	Asn	Trp	Ile	Ile	Ile
			180					185					190		
Asn	Asn	Leu	Leu	Gly	Asp	Asp	Ala	Ser	Leu	Phe	Ser	Glu	Tyr	Glu	Thr
			195				200						205		
Tyr	Gly	Asn	Tyr	Ile	Lys	Asn	His	Tyr	Pro	Glu	Lys	Val	Cys	Phe	Leu
	210					215					220				
Asp	Leu	Lys	Trp	Leu	Arg	Glu	Gly	Ser	Lys	Val	Leu	Gly	Ser	Leu	Phe
225					230					235					240
Pro	Lys	Ile	Glu	Asp	Ile	Glu	Lys	Leu	His	Gly	Tyr	Tyr	Phe	Val	Ser
				245					250					255	
Phe	Glu	Leu	Asn	Thr	Val	Gly	Ala	Ser	Phe	Phe	Thr	Lys	Val	Lys	Lys
			260					265					270		
His	Leu	Phe	Cys	Phe	Leu	Tyr	Pro	Arg	Phe	Ser	Phe	Leu	Lys	Arg	Ile
		275					280					285			
Ile	Tyr	Lys	Val	Leu	Pro	Tyr	Glu	Ile	Asn	Asn					
	290					295									

<210> 7241
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 <212> PRT
 <213> B.fragilis

<400> 7241

Thr	Leu	Glu	Ile	Met	Asn	Arg	Arg	Val	Ile	Gln	Ile	Phe	Cys	Met	Val
1				5					10					15	
Val	Gly	Met	Val	Leu	Ala	Ser	Ser	Cys	Gly	Asp	Glu	Cys	Pro	Val	Glu
			20					25					30		
Gln	Pro	Tyr	Ser	Val	Arg	Val	Ser	Val	Lys	Asp	Lys	Asn	Tyr	Leu	Asn
		35					40					45			

Ile Ser Gln Phe Pro Gln Leu Ser Pro Val Asp Glu Asn Leu Pro Phe
 50 55 60
 Arg Thr Tyr Ala Gly Thr Leu Tyr Tyr Ala Leu Tyr Asp Ala Ser Thr
 65 70 75 80
 Gly Ala Leu Ile Arg Glu Ser Ala Val Val Ser Thr Glu Gly Glu Glu
 85 90 95
 Lys Glu Tyr Thr Leu Thr Phe Pro Gly Val Pro Asp Gly Asp Tyr Lys
 100 105 110
 Leu Ala Val Trp Gly Asn Leu Thr Thr Asp Tyr Pro Ala Gly Ile Leu
 115 120 125
 His Gln Asp Gly Lys Glu His Thr Asp Ile Tyr Val Thr Ser Gly Asp
 130 135 140
 Leu His Phe Ser Pro Asp Tyr Gln Thr Glu Glu Leu Thr Leu Glu Arg
 145 150 155 160
 Thr Lys Gly Lys Leu Leu Leu Leu Cys Ser Asn Phe Pro Ser Glu Ile
 165 170 175
 Thr Arg Ile Glu Gln Asn Val Ser His Val Tyr Gln Ser Thr Asp Ala
 180 185 190
 Ala Leu Asn Tyr Ser Gly Ser Thr Gln Val Asp Lys Asn Val Pro Phe
 195 200 205
 Thr Ser Val Leu Glu Thr Leu Leu Ala Pro Thr Ser Ala Glu Gly His
 210 215 220
 Ser Lys Leu Thr Leu Thr Phe Tyr Thr Gly Gly Thr Arg Ala Ser Glu
 225 230 235 240
 Thr Pro Tyr Leu Lys Leu Pro Val Met Glu Met Asp Met Arg Arg Asn
 245 250 255
 Glu Ile Thr Ala Val Ser Ile Asp Tyr Asn Thr Ser Glu Gly Ile Trp
 260 265 270
 Glu Ile Lys Met Phe Ile Arg Gly Glu Trp Ile Thr Ile His Arg Leu
 275 280 285
 Asp Ile Phe
 290

<210> 7242
 <211> 123
 <212> PRT
 <213> B.fragilis

<400> 7242
 Val His Asn Leu Gln Arg Lys Phe Ser Leu Thr Leu Asn Gly Arg Asp
 1 5 10 15
 Cys Ala Trp Phe Leu Ser Val Arg Ser Leu Arg Asp Ile Tyr Ile Ser
 20 25 30
 Ile Arg Asn Gly Ser Val Leu Tyr Phe Val Val Phe Thr Phe Asn Asn
 35 40 45
 Ile Lys Thr Val Met Gly Lys Gln Ile Glu Tyr Ser Asn Gly Glu Leu
 50 55 60
 Thr Ile Val Trp Gln Pro Glu Leu Cys Arg His Ala Gly Ile Cys Val
 65 70 75 80
 Lys Thr Leu Pro Asn Val Tyr His Pro Lys Glu Arg Pro Trp Ile Lys
 85 90 95
 Met Glu Asn Ala Thr Thr Glu Glu Leu Ile Ala Gln Ile Lys Met Cys
 100 105 110
 Pro Ser Gly Ala Leu Ser Tyr Lys Leu Lys Lys
 115 120

<210> 7243
 <211> 68
 <212> PRT

<213> B.fragilis

<400> 7243

Arg Phe Tyr Val Phe Tyr Pro Gly Asn Ile Thr Phe Asn Met Lys Phe
 1 5 10 15
 Ile Leu Met Phe Phe Phe Ile Ile Tyr Gln Phe Ile Ile Phe Ser His
 20 25 30
 Asn Leu Leu Thr Phe Lys Ser Cys Phe Ile Leu Gln His Leu Glu Asp
 35 40 45
 Lys Leu Cys Phe Leu Leu Leu Phe Ile Tyr Glu Ser Phe Lys Gln Leu
 50 55 60
 Asp Asp Gly Ile
 65

<210> 7244

<211> 527

<212> PRT

<213> B.fragilis

<400> 7244

Glu Ile Glu Val Thr Ser Glu Leu Val Val Asp Val Gln Pro Lys Glu
 1 5 10 15
 Val Ser Ile Ala Leu Leu Glu Asp Lys Ser Leu Val Glu Leu Gln Ser
 20 25 30
 Glu Gly Arg Asn Ile Ser Phe Ser Val Gly Asn Met Tyr Leu Gly Arg
 35 40 45
 Val Lys Lys Leu Met Pro Gly Leu Asn Ala Cys Phe Val Asp Val Gly
 50 55 60
 Tyr Glu Lys Asp Ala Phe Leu His Tyr Leu Asp Leu Gly Pro Gln Phe
 65 70 75 80
 Asn Ser Leu Glu Lys Tyr Val Lys Gln Thr Leu Ser Asp Lys Lys Lys
 85 90 95
 Leu Asn Pro Ile Ser Lys Ala Thr Leu Leu Pro Asp Leu Asp Lys Asp
 100 105 110
 Gly Thr Val Ala Asn Thr Leu Lys Val Gly Gln Glu Val Val Val Gln
 115 120 125
 Ile Val Lys Glu Pro Ile Ser Thr Lys Gly Pro Arg Leu Thr Ser Glu
 130 135 140
 Ile Ser Phe Ala Gly Arg Tyr Leu Val Leu Ile Pro Phe Asn Asp Lys
 145 150 155 160
 Val Ser Val Ser Gln Lys Ile Lys Ser Ser Glu Glu Arg Ala Arg Leu
 165 170 175
 Lys Gln Leu Leu Met Ser Ile Lys Pro Lys Asn Phe Gly Val Ile Val
 180 185 190
 Arg Thr Val Ala Glu Gly Lys Arg Val Ala Glu Leu Asp Gly Glu Leu
 195 200 205
 Lys Val Leu Leu Lys His Trp Glu Glu Ser Ile Thr Lys Val Gln Lys
 210 215 220
 Ala Thr Lys Phe Pro Thr Leu Ile Tyr Glu Glu Thr Ser Arg Ala Val
 225 230 235 240
 Ala Leu Leu Arg Asp Leu Phe Asn Pro Ser Phe Glu Asn Ile Tyr Val
 245 250 255
 Asn Asn Glu Ala Val Phe Asn Glu Ile Arg Asp Tyr Val Thr Leu Ile
 260 265 270
 Ala Pro Glu Arg Ala Gly Ile Val Lys Leu Tyr Lys Gly Gln Leu Pro
 275 280 285
 Ile Tyr Asp Asn Phe Gly Ile Thr Lys Gln Ile Lys Ser Ser Phe Gly
 290 295 300
 Lys Thr Val Ser Tyr Lys Ser Gly Ala Tyr Leu Ile Ile Glu His Thr

305 310 315 320
 Glu Ala Leu His Val Val Asp Val Asn Ser Gly Asn Arg Thr Lys Asn
 325 330 335
 Ala Asn Gly Gln Glu Gly Asn Ala Leu Glu Val Asn Leu Gly Ala Ala
 340 345 350
 Asp Glu Leu Ala Arg Gln Leu Arg Leu Arg Asp Met Gly Gly Ile Ile
 355 360 365
 Val Val Asp Phe Ile Asp Met Asn Glu Ala Glu Asn Arg Gln Lys Leu
 370 375 380
 Tyr Glu Arg Met Cys Ala Asn Met Gln Lys Asp Arg Ala Arg His Asn
 385 390 395 400
 Ile Leu Pro Leu Ser Lys Phe Gly Leu Met Gln Ile Thr Arg Gln Arg
 405 410 415
 Val Arg Pro Ala Met Asp Val Asn Thr Thr Glu Thr Cys Pro Thr Cys
 420 425 430
 Phe Gly Lys Gly Thr Ile Lys Ser Ser Ile Leu Phe Thr Asp Thr Leu
 435 440 445
 Glu Ser Lys Ile Asp Tyr Leu Val Asn Lys Leu Lys Ile Lys Lys Phe
 450 455 460
 Ser Leu His Ile His Pro Tyr Val Ala Ala Tyr Leu Asn Gln Gly Leu
 465 470 475 480
 Met Ser Leu Lys Arg Lys Trp Gln Met Lys Tyr Gly Phe Gly Ile Lys
 485 490 495
 Ile Ile Pro Ser Gln Lys Leu Ala Phe Leu Glu Tyr Val Phe Tyr Asp
 500 505 510
 Ser His Gly Glu Glu Ile Asp Met Lys Glu Glu Phe Glu Ile Lys
 515 520 525

<210> 7245
 <211> 207
 <212> PRT
 <213> B.fragilis

<400> 7245
 Ile Asn Asn Ser Glu Ser Met Arg Tyr Leu Leu Met Asn Tyr Gly Val
 1 5 10 15
 Leu Gly Val Ile Arg Leu Ala Leu Asp Phe Ile Gly Thr Lys Ile Ala
 20 25 30
 Phe Arg Lys Ser Arg Leu Ile Arg Phe Pro Ile Asp Ile Arg Gly Arg
 35 40 45
 Ser Phe Ile Asp Phe Gly Ser Asn Leu Thr Thr Gly Arg Tyr Cys Arg
 50 55 60
 Leu Glu Val Tyr Pro Ile Glu His Lys Lys Gly Ile Leu Lys Ile Gly
 65 70 75 80
 Asp Asn Val Glu Ile Asn Asp Phe Val His Ile Ala Ala Arg Leu Ser
 85 90 95
 Val Gln Ile Gly Asn Asn Val Leu Ile Ala Ser Lys Val Phe Ile Ser
 100 105 110
 Asp Ile Gln His Gly Cys Tyr Asn Ser Asn Lys Met Phe Asn Asp Cys
 115 120 125
 Tyr Pro Asp Ile Pro Pro Lys Glu Arg Ser Leu Phe Ala Glu Ser Val
 130 135 140
 Phe Val Gly Asp Asn Val Trp Ile Gly Glu Ser Val Ser Ile Leu Ala
 145 150 155 160
 Gly Val Lys Ile Gly Asp Phe Ser Ile Ile Gly Ala Asn Ser Val Val
 165 170 175
 Cys Lys Ser Ile Pro Ser Tyr Ser Ile Ala Val Gly Asn Pro Ala Thr
 180 185 190
 Val Ile Lys Lys Phe Asn Lys Thr Thr Asn Lys Trp Glu Lys Val

195

200

205

<210> 7246
 <211> 335
 <212> PRT
 <213> B.fragilis

<400> 7246

Ile	Arg	Leu	Ser	Asp	Tyr	Leu	His	Asn	Leu	Tyr	Leu	Lys	Lys	Ile	Cys
1				5					10					15	
Lys	Leu	Lys	Thr	Arg	Asn	Lys	Met	Asn	Glu	Thr	Leu	Thr	Val	Phe	Met
			20					25					30		
Ile	Ser	Glu	Ile	Glu	Arg	Leu	Arg	Glu	Glu	Gly	Arg	Glu	Pro	Ala	Arg
		35					40					45			
Arg	Ile	Tyr	His	Asn	Met	Leu	Arg	Thr	Leu	Arg	Glu	Ser	Ala	Gly	Lys
	50					55					60				
Glu	Glu	Ile	Gly	Phe	Glu	Glu	Val	Thr	Pro	Val	Phe	Leu	Gly	Lys	Tyr
65					70					75				80	
Glu	His	Trp	Leu	Leu	Gly	Lys	Arg	Leu	Ser	Trp	Asn	Thr	Val	Ser	Thr
			85						90					95	
Tyr	Met	Arg	Ala	Leu	Arg	Ala	Gly	Tyr	Asn	Arg	Gly	Met	Lys	Gly	Arg
			100					105					110		
Pro	Gly	Tyr	Val	Thr	Gly	Leu	Phe	Asp	Lys	Val	Tyr	Thr	Gly	Thr	Arg
		115					120					125			
Ser	Asp	Val	Lys	Arg	Ala	Val	Asp	Ala	Arg	Thr	Val	Gly	Arg	Met	Ile
	130					135					140				
Arg	Met	Ser	Gly	Cys	Pro	Asp	Glu	Ser	Ala	Ser	Ala	Lys	Ala	Val	Asp
145					150				155					160	
Trp	Phe	Val	Leu	Met	Phe	Met	Leu	Arg	Gly	Ile	Pro	Phe	Val	Asp	Leu
			165					170						175	
Ala	His	Leu	Arg	Arg	Ser	Asn	Leu	Asp	Lys	Gly	Val	Leu	Thr	Tyr	Cys
			180					185					190		
Arg	His	Lys	Thr	Gly	Gln	Glu	Val	Ser	Ile	Ser	Val	Pro	Arg	Glu	Ala
		195					200					205			
Met	Glu	Ile	Ile	Asn	Arg	Arg	Met	Val	Glu	Asn	Cys	His	Pro	Ser	Tyr
	210				215						220				
Leu	Leu	Pro	Ile	Leu	Gly	Gln	Pro	Arg	Thr	Arg	Lys	Arg	His	Thr	Lys
225					230					235					240
Lys	Ala	Leu	Thr	Pro	Tyr	Gln	Glu	Tyr	Gln	Tyr	Ala	Leu	Arg	Asn	Leu
				245					250					255	
Asn	Arg	Arg	Leu	Glu	Arg	Val	Ser	Val	Asp	Leu	Arg	Leu	Gly	Gly	Arg
			260					265					270		
Leu	Ser	Ser	Tyr	Thr	Ala	Arg	His	Thr	Trp	Ala	Thr	Ile	Ala	Phe	His
		275					280					285			
Gln	Glu	Thr	Pro	Val	Gly	Val	Ile	Ser	Arg	Gly	Leu	Gly	His	Ser	Ser
	290					295					300				
Val	Lys	Val	Thr	Glu	Thr	Tyr	Leu	Lys	Pro	Phe	Gly	Asp	Arg	Glu	Val
305					310					315				320	
Asp	Arg	Thr	Asn	Arg	Lys	Ile	Leu	Asn	Tyr	Val	Leu	Asn	Ala	Val	
			325						330					335	

<210> 7247
 <211> 529
 <212> PRT
 <213> B.fragilis

<400> 7247

Leu	Gln	Cys	Pro	Met	Asp	Thr	Pro	Ile	Asn	Ala	Pro	Leu	Arg	Lys	Leu
1				5					10					15	

Pro	Ile	Gly	Ile	Gln	Ser	Phe	Glu	Lys	Leu	Arg	Ser	Glu	Asn	Phe	Leu
		20						25					30		
Tyr	Val	Asp	Lys	Thr	Ala	Leu	Ile	Tyr	Arg	Leu	Ala	Gln	Ala	Gly	Asn
		35					40					45			
Pro	Cys	Phe	Leu	Ser	Arg	Pro	Arg	Arg	Phe	Gly	Lys	Ser	Leu	Leu	Leu
	50					55					60				
Ser	Ser	Phe	Glu	Ala	Tyr	Phe	Gln	Gly	Lys	Lys	Glu	Leu	Phe	Arg	Gly
65					70					75					80
Leu	Ala	Ile	Glu	Lys	Leu	Glu	Lys	Glu	Trp	Leu	Gln	Tyr	Pro	Val	Leu
				85					90					95	
His	Leu	Ser	Leu	Asn	Ala	Glu	Lys	Tyr	Asp	Ser	Arg	Glu	Gly	Leu	Ile
			100					105					110		
Asp	Ile	Leu	Glu	Arg	Gln	Leu	Arg	Gln	Trp	Glu	Glu	Leu	Tyr	Arg	Thr
		115					120					125			
Gly	Arg	Glu	Gly	Ile	Thr	His	Ser	Gly	Arg	Phe	Met	Thr	Val	Ile	Arg
		130				135					140				
Arg	Ala	Cys	Glu	Gln	Thr	Gly	Arg	Arg	Val	Val	Val	Leu	Ile	Asp	Glu
145					150					155					160
Tyr	Asp	Lys	Pro	Leu	Leu	Arg	Ser	Phe	Asp	Ser	Gln	Glu	Leu	Gln	His
			165						170					175	
Asp	Phe	Arg	Glu	Thr	Leu	Thr	Ala	Phe	Tyr	Thr	Val	Leu	Lys	Asp	Ala
		180						185					190		
Asp	Pro	Trp	Leu	Gln	Phe	Val	Phe	Ile	Thr	Gly	Val	Thr	Lys	Phe	Ala
		195					200					205			
Gln	Met	Gly	Ile	Phe	Ser	Asn	Leu	Asn	Gln	Leu	Asn	Asp	Ile	Ser	Phe
		210				215					220				
Asp	Leu	Asp	Tyr	Asn	Thr	Leu	Cys	Gly	Met	Thr	Arg	Ala	Glu	Ile	Glu
225					230					235					240
Ala	Thr	Phe	Ser	Pro	Glu	Leu	Glu	Ala	Leu	Ala	Val	Lys	Ser	Asn	Ala
			245						250					255	
Thr	Cys	Arg	Gln	Val	Met	Asp	Arg	Leu	Thr	Arg	Gln	Tyr	Asp	Gly	Tyr
		260						265					270		
Arg	Phe	Thr	Lys	Asp	Glu	Glu	Phe	Thr	Ser	Met	Tyr	Asn	Pro	Phe	Ser
		275					280					285			
Val	Leu	Ser	Ala	Leu	Gln	Lys	Arg	Ser	Tyr	Gly	Asn	Tyr	Trp	Phe	Ala
	290					295					300				
Ser	Gly	Thr	Pro	Thr	Phe	Leu	Val	Glu	Met	Leu	Gln	Lys	Thr	Asp	Phe
305					310					315					320
Asp	Leu	Arg	Glu	Met	Glu	Gly	Ile	Glu	Val	Asn	Glu	Ala	Ser	Leu	Ser
			325						330					335	
Asp	Asp	Arg	Ala	Asp	Ile	Asn	Asn	Pro	Ile	Pro	Met	Ile	Tyr	Gln	Ser
		340						345					350		
Gly	Tyr	Leu	Thr	Ile	Lys	Asp	Tyr	Asp	Glu	Arg	Phe	Arg	Met	Tyr	Thr
		355					360					365			
Leu	Gly	Phe	Pro	Asn	Glu	Glu	Val	Lys	Tyr	Gly	Phe	Leu	Asn	Phe	Val
	370					375					380				
Ser	Pro	Phe	Tyr	Thr	Pro	Ile	Ala	Gln	Thr	Asp	Thr	Ser	Phe	Tyr	Ile
385					390					395					400
Gly	Lys	Phe	Ile	Arg	Glu	Leu	Glu	Ser	Gly	Asp	Val	Asp	Ala	Phe	Leu
			405						410					415	
Thr	Arg	Leu	Arg	Cys	Phe	Phe	Ala	Gly	Ile	Pro	Tyr	Asp	Leu	Asn	Asp
		420						425					430		
Arg	Thr	Glu	Arg	His	Tyr	Gln	Thr	Val	Phe	Tyr	Leu	Val	Phe	Gln	Leu
		435					440					445			
Met	Gly	Gln	Phe	Thr	Glu	Thr	Glu	Val	Arg	Ser	Ala	Arg	Gly	Arg	Ala
	450					455					460				
Asp	Ala	Val	Val	Lys	Thr	Pro	Asp	Tyr	Ile	Tyr	Val	Phe	Glu	Phe	Lys
465					470					475					480
Leu	Asn	Asp	Ser	Ala	Glu	Ala	Ala	Leu	Arg	Gln	Ile	Asp	Glu	Lys	Gly

485 490 495
 Tyr Leu Leu Pro Tyr Gln Ala Asp Gly Arg Lys Val Val Lys Val Gly
 500 505 510
 Val Ala Phe Glu Lys Glu Glu Arg Asn Ile Gly Glu Trp Met Ile Gly
 515 520 525
 Gly

<210> 7248
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 7248
 Thr Arg Ser Ala Ala Pro Gly Ile Leu Arg Asn Leu Pro Arg Ile Leu
 1 5 10 15
 Lys Ser Met Tyr Val Ala Val Trp Ala Pro Ala Arg His Arg His Arg
 20 25 30
 Ser Gly Thr Trp Pro Phe Thr Asp Asn Arg Tyr Leu Asp Pro Gly Gly
 35 40 45
 Ile Phe Gly Ser Thr Thr Arg Lys Ile Gln Lys Lys Met Leu Ser Leu
 50 55 60
 Tyr Leu Arg Val
 65

<210> 7249
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 7249
 Arg Leu His Glu Gln Glu Glu Thr Val Lys Lys Asp Ile Arg Val Leu
 1 5 10 15
 Arg Tyr Leu Ile Ala Lys Glu Glu Glu Ala Ala Ser Pro Gln Ala Pro
 20 25 30
 Arg Lys Arg Lys Ile Pro Gln Lys Glu Ile Asn Asp Phe Phe Thr Arg
 35 40 45
 Ile Ala Leu Phe Tyr Glu Asp Leu Gln Arg Arg Leu Asn Leu Arg Ile
 50 55 60
 Thr Tyr Arg Cys Phe Cys Arg Trp Leu Cys Thr Arg Tyr Glu Phe Glu
 65 70 75 80
 Ser Arg Tyr His Asp Arg His Lys Leu Ser Pro Cys Thr Ile Leu Gly
 85 90 95
 Tyr Phe Lys Arg Glu Arg Gly Gly
 100

<210> 7250
 <211> 305
 <212> PRT
 <213> B.fragilis

<400> 7250
 His Cys Ala Arg Val Gly Ser Phe Gln Pro Arg Gly Glu Asp Ile Arg
 1 5 10 15
 Phe Asp Trp Ala Val Lys Arg Leu Leu Arg Asn Lys Ala Asn Phe Gly
 20 25 30
 Val Leu Glu Gly Phe Leu Thr Val Leu Leu Gly Glu Pro Ile Arg Ile
 35 40 45
 Val Glu Ile Leu Glu Ser Glu Gly Asn Gln Leu Asn Glu Thr Asp Lys

50 55 60
 Phe Asn Arg Val Asp Ile Lys Ala Arg Asn Ser Lys Asp Glu Ile Ile
 65 70 75 80
 Ile Val Glu Val Gln Asn Thr Arg Glu Ile Tyr Tyr Leu Glu Arg Ile
 85 90 95
 Leu Phe Gly Val Ala Lys Ala Ile Thr Glu His Ile Glu Leu Gly Gln
 100 105 110
 Leu Tyr Ser Glu Val Lys Lys Val Tyr Ser Ile Ser Ile Leu Tyr Phe
 115 120 125
 Asp Ile Gly Arg Gly Thr Asp Tyr Leu Tyr His Gly Gln Asn Ser Phe
 130 135 140
 Val Gly Val His Thr Gly Asp Phe Leu Glu Val Ser Thr Lys Glu Lys
 145 150 155 160
 Asp Ala Ile Val Arg Lys Leu Pro Ala Glu Ile Phe Pro Glu Tyr Phe
 165 170 175
 Leu Ile Arg Val Asn Glu Phe Asn Lys Val Ala Val Thr Pro Leu Glu
 180 185 190
 Glu Trp Ile Glu Tyr Leu Lys Thr Gly Val Ile His Pro Asp Thr Lys
 195 200 205
 Ala Pro Gly Leu Glu Glu Ala Arg Arg Lys Leu Val Tyr Tyr Asn Met
 210 215 220
 Asn Lys Ala Glu Gln Leu Ala Tyr Asp Glu His Ile Asn Ala Ile Met
 225 230 235 240
 Ile Gln Asn Asp Val Leu Ser Thr Ala Ala Met Glu Gly Arg Gln Glu
 245 250 255
 Ser Leu Ala Glu Gly Arg Gln Gly Gly Leu Ala Glu Ser Arg Met Gly
 260 265 270
 Glu Lys Gln Ala Asn Ala Pro Glu Ile Glu Ala Leu Thr Leu Pro Val
 275 280 285
 Glu Thr Ile Cys Gln Val Thr Gly Leu Ser Ala Gly Glu Ile Glu Asn
 290 295 300
 Leu
 305

<210> 7251
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 7251
 Ile Arg Val Val Ser Leu Val Val Gln His Val Lys Tyr Arg Arg Lys
 1 5 10 15
 Cys Tyr Leu Cys Ile Tyr Glu Tyr Lys Lys Asn Lys Glu Glu Cys Gln
 20 25 30
 Leu Leu His Pro Leu His Phe Val Thr Lys Cys Glu Asn Leu Lys Asn
 35 40 45
 Asn Cys Val His Leu Gln Lys Thr Asn Phe Asn Ala Pro Trp Ile His
 50 55 60
 Arg Ser Met Pro Arg Leu Glu Asn Ser Arg
 65 70

<210> 7252
 <211> 509
 <212> PRT
 <213> B.fragilis

<400> 7252
 Met Leu Asn Phe Asn Trp Val Lys Met Lys Lys Thr Ile Phe Leu Ser
 1 5 10 15

Thr Ile Ile Leu Leu Leu Thr Ala Cys Gln Asp Tyr Leu Glu Thr Asn
 20 25 30
 Pro Asp Ser Thr Phe Asp Val Gln Ile Asp Ser Glu Asp Lys Ile Ala
 35 40 45
 Glu Leu Leu Ala Gly Ala Tyr Pro Glu Ala Ser Tyr Phe Ala Phe Leu
 50 55 60
 Glu Ala Arg Thr Asp Asn Val Gly Glu Arg Thr Asn Gly Ile His Ser
 65 70 75 80
 Arg Leu Asn Glu Ala Met Tyr Tyr Trp Glu Asp Tyr Asp Gln Glu Asp
 85 90 95
 Leu Asp Thr Pro Leu Asn Tyr Trp Asn Ala Cys Tyr Ala Gly Ile Ala
 100 105 110
 Gln Ala Asn Gln Ala Leu Glu Leu Leu Ser Lys Tyr Pro Lys Ser Asp
 115 120 125
 Arg Val Lys Ala Leu Tyr Gly Glu Ala Phe Leu Leu Arg Ala Tyr Leu
 130 135 140
 His Phe Met Leu Val Asn Ile Trp Ala Glu Pro Tyr Gly Thr Thr Lys
 145 150 155 160
 Ser Ala Thr Ala Pro Gly Ile Pro Tyr Leu Thr Arg Pro Glu Lys Asn
 165 170 175
 Ala Leu Val Asp Tyr Glu Arg Gly Thr Val Lys Glu Val Tyr Glu Lys
 180 185 190
 Ile Glu Lys Asp Leu Lys Leu Gly Leu Ser Leu Val Asn Asp Asp Tyr
 195 200 205
 Tyr Val Lys Pro Lys Phe His Phe Asn Lys Lys Ala Ala Tyr Ala Phe
 210 215 220
 Ala Ser Arg Phe Tyr Leu Ile Lys Gly Glu Trp Asp Leu Val Val Ser
 225 230 235 240
 Tyr Ser Asp Tyr Val Leu Gly Val Asp Pro Lys Pro Val Leu Arg Asn
 245 250 255
 Trp Gln Lys Tyr Lys Lys Glu Phe Asn Ser Asn His Lys Tyr Leu Tyr
 260 265 270
 Ile Arg Tyr Ala Ser Val Asp Glu Pro Ala Asn Leu Leu Leu Thr Thr
 275 280 285
 Thr Glu Ser Arg Val Ala Arg Asn Ile Pro Ser Glu Lys Tyr Gly Val
 290 295 300
 Thr Ile Gln Ser Ala Glu Lys Val Tyr Asn Glu His Gly Ile Asp Gly
 305 310 315 320
 Cys Phe Asn Phe Arg Lys Met Lys Met Gln Ser Phe Phe Leu Phe Asn
 325 330 335
 Tyr Asn Asp Gly Arg Ile Asp Asp Gly Gln Tyr Ile Ala Lys Phe Asp
 340 345 350
 Glu Leu Ser Leu Ser Gly Tyr Thr Gly Ile Arg Pro Arg Gly Leu Tyr
 355 360 365
 Val Thr Asn Val Leu Phe Ser Thr Asp Glu Val Met Leu Asn Arg Met
 370 375 380
 Glu Ala Tyr Thr Met Leu Gly Glu Tyr Asp Lys Ala Ile Asp Asn Leu
 385 390 395 400
 Leu Val Tyr Leu Ser Val Lys Tyr Gly Val Tyr Pro Ser Cys Gly Arg
 405 410 415
 Ser Thr Tyr Thr Gln Thr Ser Ser Glu Asn Tyr Gln Ile Tyr Thr Pro
 420 425 430
 Phe Tyr Gly Met Ser Ile Asn Gln Leu Ala Leu Val Lys Ile Leu Leu
 435 440 445
 Gly Phe Arg Arg Gln Glu Phe Leu His Glu Gly Leu Arg Trp Phe Asp
 450 455 460
 Ile Arg Arg Phe Tyr Ile Ser Val Lys Arg Thr Ser Lys Tyr Lys Phe
 465 470 475 480
 Tyr Arg Pro Leu Glu Lys Glu Asp Ser Arg Lys Leu Leu Gln Ile Pro

Ala Glu Ala Ile Asn Arg Gly Leu Val Pro Asn Pro Arg
 500 485 490 495
 505

<210> 7253
 <211> 362
 <212> PRT
 <213> B.fragilis

<400> 7253

Ile Phe Asp Phe Thr Leu Arg Lys Asn Met Lys Lys Met Asn Tyr Leu
 1 5 10 15
 Leu Lys Cys Leu Phe Leu Ser Cys Leu Leu Ile Ser Val Val Ala Cys
 20 25 30
 Thr Asp Gly Ile Asn Glu Thr Val Ile Ser Ala Tyr Gln Leu Pro Val
 35 40 45
 Leu Pro Glu Pro Ser Tyr Lys Phe Ser Arg Asn Gly Glu Ser Ser Val
 50 55 60
 Asn Val Leu Glu Cys Gly Phe Leu Lys Ser Pro Ile Asp Arg Ile Phe
 65 70 75 80
 Ser Glu Tyr Met Asn Glu Ala Arg Met Ser Thr Lys Arg Asp Tyr Asp
 85 90 95
 Glu Ala Leu Arg Ile Tyr His Glu Gly Asn Phe Gly Leu Lys Pro Gln
 100 105 110
 Lys Glu Val Ser Ala Ser Ser Lys His Leu Lys Asp Arg Asp Lys Ile
 115 120 125
 Leu Lys Asp Ile Asp Ala Trp Phe Glu Thr Ser Ala Arg Ile Ala Gly
 130 135 140
 Leu Gly Ala Asn Ile Pro Ser Tyr Glu His Arg Asn Arg Glu Ala Val
 145 150 155 160
 Lys Gly Leu Thr Gly Tyr Val Gly Asn Gly Ile Gly Asp Lys Asp Ile
 165 170 175
 Cys Tyr Val Asp Glu Arg Gly Ile Ala Val Ala Glu Val Tyr Lys Tyr
 180 185 190
 Ala Ile Met Gly Ala Ile Tyr Leu Asp Lys Ile Leu Asn Ile His Leu
 195 200 205
 Ser Glu Gln Ile Leu Glu Asn Asn Glu Val Leu Val Arg Asn Asp Leu
 210 215 220
 Thr Gln Leu Leu Pro Gly His Asn Tyr Thr Glu Leu Glu His His Trp
 225 230 235 240
 Asp Leu Ala Tyr Gly Tyr Tyr Asp Phe Trp Lys Thr Leu Ala Gln Ser
 245 250 255
 Asp Gly Leu Pro Ala Leu Lys Asp Cys His Leu Arg Ile Ser Arg Ser
 260 265 270
 Phe Val Lys Gly Arg Ala Leu Met Thr Thr Ser Gln Tyr Asp Glu Met
 275 280 285
 Arg Leu Gln Ala Asp Thr Ile Arg Gln Glu Leu Ser Arg Val Val Ala
 290 295 300
 Ile Arg Ala Met His Leu Leu Val Gly Pro Asn Thr Leu Ala Asn Leu
 305 310 315 320
 Lys Glu Asn Pro Arg Arg Ala Phe Arg Leu Leu Ser Gln Ala Tyr Gly
 325 330 335
 Leu Ile Tyr Ala Ala Gln Phe Ala Arg Asn Met Glu Gly Lys Ser Leu
 340 345 350
 Ser Ser Pro Arg Gly Trp Lys Asp Arg Gln
 355 360

<210> 7254
 <211> 67

<212> PRT
 <213> B.fragilis

<400> 7254

Glu	Arg	Asn	Asn	Glu	Gln	Ile	Gln	Thr	Ser	Ser	Lys	Lys	Val	Ser	Glu
1			5					10					15		
Ile	His	Phe	Ser	Asn	Asn	Cys	Phe	His	Met	Leu	Asp	Phe	Ile	Leu	Glu
			20				25					30			
Ser	Ser	Ser	Ile	Ile	Leu	Tyr	Arg	Gly	Leu	Gly	Thr	Ser	Pro	Arg	Leu
		35				40					45				
Met	Ala	Ser	Ala	Gly	Ile	Cys	Lys	Ser	Phe	Leu	Glu	Ser	Ser	Phe	Ser
	50					55					60				
Asn	Gly	Leu													
65															

<210> 7255

<211> 344

<212> PRT

<213> B.fragilis

<400> 7255

Phe	Lys	Asn	Lys	Ile	Lys	His	Met	Lys	Thr	Ile	Ile	Arg	Lys	Val	Asn
1			5					10					15		
Phe	Arg	Tyr	Phe	Phe	Arg	Arg	Ser	Leu	Tyr	Leu	Leu	Val	Ile	Ser	Phe
			20				25					30			
Leu	Leu	Ala	Gly	Cys	Glu	Glu	Glu	Ala	Ser	Leu	Ser	Ala	Arg	Ser	Val
		35				40					45				
Val	Glu	Ala	Gly	Glu	Thr	Glu	Arg	Glu	Lys	Thr	Glu	Leu	Asp	Lys	Trp
	50				55					60					
Ile	Leu	Asp	Thr	Phe	Thr	Arg	Pro	Tyr	Gly	Ile	Glu	Val	Glu	Tyr	Arg
65					70				75					80	
Trp	Asp	Lys	Asn	Ala	Val	Gln	Asn	Gly	Ser	Tyr	Ile	Tyr	Pro	Pro	Glu
			85					90					95		
Val	Ala	Asn	Val	Lys	Ser	Val	Leu	Asn	Thr	Ile	Lys	Thr	Leu	Trp	Ile
		100						105				110			
Asp	Leu	Tyr	Thr	Ala	Pro	Glu	Leu	Gly	Gly	Asp	Lys	Phe	Leu	Leu	Gly
	115					120					125				
Lys	Asn	Pro	Leu	Lys	Ile	Tyr	Met	Tyr	Gly	Gly	Arg	Asn	Val	Asp	Gly
	130				135						140				
Asn	Gly	Met	Glu	Leu	Leu	Asp	Asn	Leu	Glu	Ala	Thr	Thr	Asn	Glu	Met
145				150					155					160	
Phe	Leu	Tyr	Asn	Val	Asn	Glu	Phe	Asn	Pro	Gln	Asp	Glu	Asp	Lys	Val
			165					170						175	
Phe	Ile	Leu	Met	Arg	Ser	Val	His	His	Gln	Phe	Ala	Arg	His	Leu	Met
		180					185					190			
Glu	Leu	Phe	Pro	Tyr	Asp	Arg	Ser	Lys	Phe	Leu	Ser	Ile	Ser	Arg	Asn
	195					200					205				
Lys	Tyr	Ile	Glu	Ser	Thr	Lys	Ser	Ile	Ala	Trp	Ile	Phe	Lys	Gly	Glu
	210				215						220				
Thr	Gln	Gly	Arg	Arg	Gly	Phe	Ile	Leu	Ala	Gly	Tyr	Pro	Asn	Lys	Lys
225				230					235					240	
Gly	Phe	Phe	Thr	Phe	His	Ser	Leu	Leu	Ser	Pro	Glu	Lys	Asp	Phe	Ala
			245					250						255	
Glu	Ile	Ile	Ser	Leu	Lys	Leu	Thr	Tyr	Gly	Pro	Lys	Asp	Leu	Leu	Gln
		260					265						270		
Ala	Leu	Asp	Arg	Ala	Lys	Thr	Pro	Tyr	Asn	Ala	Gly	Ser	Asp	Lys	Asp
	275					280						285			
Leu	Gln	Lys	Glu	Tyr	Asp	Glu	Gln	Ala	Leu	Gln	Ala	Tyr	Lys	Glu	Leu
	290					295					300				

Val Glu Lys Gln Ala Phe Val Glu Asp Tyr Phe Ser Lys Glu Ile Lys
 305 310 315 320
 Ile Ser Leu Asn Tyr Leu Gln Leu Ile Ser Met Lys Gln Val Lys Glu
 325 330 335
 Phe Ile Asn Lys Asn Lys Lys Glu
 340

<210> 7256
 <211> 345
 <212> PRT
 <213> B.fragilis

<400> 7256

Glu Arg Met Lys Leu Gly Phe Gln Ile Leu Ile Leu Met Val Phe Cys
 1 5 10 15
 Phe Ser Cys Lys Asp Glu Lys Val Phe Asp Ser Ser Pro Ser Glu Arg
 20 25 30
 Asn Ala Asn His Ile Gly Glu Leu Arg Lys Glu Leu Val Asn Ala Pro
 35 40 45
 Tyr Gly Trp Ala Val Thr Tyr Phe Pro Arg Thr Asp Ser Leu Leu Phe
 50 55 60
 Thr Asn Val Asn Glu Leu Ile Thr Leu Pro Lys Gly Ile Phe Glu Asp
 65 70 75 80
 Lys Asn Lys Tyr Gly Tyr Gly Gly His Tyr Phe Leu Met Lys Phe Ser
 85 90 95
 Glu Asn Gly Ile Val Glu Thr Val Ala Asp Tyr Asn Glu Glu Ser Leu
 100 105 110
 Thr Lys Lys Leu Gln Ser Glu Phe Glu Val Ser Gln Asn Thr Phe Thr
 115 120 125
 Gln Leu Ser Phe Thr Thr Tyr Thr Tyr Leu His Ser Leu Val Asn Asp
 130 135 140
 Arg Phe Thr Gly Ser Ser Asp Phe Leu Tyr Thr Gly Lys Asp Val Asp
 145 150 155 160
 Gly Asn Leu Ile Phe Lys Thr Ser Ser Tyr Ile Glu Pro Ala Arg Glu
 165 170 175
 Tyr Ile Ile Phe Thr Lys Leu Lys Asn Asp Glu Ser Trp Gln Glu Asp
 180 185 190
 Ile Gln Lys Ser Tyr Asp Asn Lys Leu Phe Phe Glu Lys Met Lys Asn
 195 200 205
 Pro Gln Leu Ile Ile Arg Arg Ala Gly Arg Val Tyr Phe His Ser Asp
 210 215 220
 Val Gln Met Asn Val Thr Tyr Gly Gly Asp Gly Ser Val Asn Gly Lys
 225 230 235 240
 Gln Pro Pro Glu Val Tyr Gln Arg Tyr Arg Leu Phe Leu Ala Arg Asp
 245 250 255
 Tyr Phe Ala Ser Gln Gly Trp Leu Gly Asn Lys Val Lys Gly Leu Gly
 260 265 270
 Ser Gly Tyr Val Gly Thr Ala Ala Gly Leu Thr Phe Lys Pro Gly Ile
 275 280 285
 Arg Tyr Ser Glu Thr Tyr Ile Phe Tyr Asp Phe Arg Arg Glu Gly Glu
 290 295 300
 Arg Phe Val Cys Glu Leu Val Lys Val Val Asp Pro Tyr Ser Lys Lys
 305 310 315 320
 Ile His Trp Val Ser Lys His Leu Ala Pro Tyr Gly Glu Glu Ser Gly
 325 330 335
 Val Ile Ala Glu Ile Arg Asp Glu Ile
 340 345

<210> 7257

<211> 227
 <212> PRT
 <213> B.fragilis

<400> 7257

Leu	Lys	Ser	Gly	Met	Lys	Phe	Lys	Leu	Glu	Asn	Asn	Arg	Ile	Asn	Met
1				5					10					15	
Lys	His	Val	Trp	Ile	Ile	Ser	Cys	Leu	Phe	Val	Cys	Ser	Cys	Asn	
			20					25					30		
Thr	Val	Arg	Glu	Asp	Phe	Val	Val	Asn	Glu	Asp	Tyr	Glu	Lys	Leu	Phe
			35				40					45			
Pro	Ser	Lys	Glu	Ile	Glu	Lys	Pro	Glu	Asn	Lys	Arg	Gly	Glu	Leu	Leu
			50			55					60				
Val	Gln	Leu	Cys	Asp	Pro	Asp	Gln	Ala	Leu	Glu	Asn	Tyr	Lys	Tyr	Pro
65					70				75						80
Gly	Thr	Glu	Thr	Pro	Asn	Gly	Ala	Asp	Gln	Tyr	Lys	Ile	Thr	Leu	Met
				85				90						95	
Cys	Ser	Phe	Gln	Glu	Lys	Arg	Trp	Asp	Gly	Asn	Leu	Thr	Lys	Asp	Val
			100					105					110		
Ser	Ala	Gln	Tyr	Lys	Val	Lys	Tyr	Ile	Asn	Glu	Lys	Lys	Glu	Leu	Val
			115				120						125		
Thr	Ile	Ser	Cys	Gly	Lys	Arg	Asn	Ile	Gly	Asn	Ala	Gly	Glu	Asp	Ala
			130			135					140				
Asp	Gly	Leu	Arg	Pro	Asn	Val	Met	Phe	Asn	Gly	Glu	Lys	Leu	Glu	Ile
145					150				155						160
Ser	Phe	Asn	Val	His	Ser	Gly	Phe	Pro	Leu	Tyr	Leu	Ser	Val	Ser	Gly
				165				170						175	
Glu	Gly	Pro	Arg	Ser	Ser	Asn	Ile	Arg	Ala	Ser	Ile	Thr	Ala	Val	Ser
			180				185						190		
Thr	Asp	Gly	Leu	Val	Glu	Ile	Pro	Ser	Leu	Gln	Thr	Glu	Gln	Tyr	Gln
			195				200					205			
Asn	Glu	Glu	Gly	Ile	Asn	Pro	Leu	Arg	Tyr	Pro	Tyr	Cys	Glu	Tyr	Leu
			210			215					220				
Ile	Leu	Pro													
225															

<210> 7258
 <211> 646
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (4)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 7258

Leu	Gly	Phe	Xaa	Asn	Ile	Leu	Asn	Glu	Tyr	Glu	Asn	Asn	Tyr	Leu	Lys
1				5					10					15	
Thr	Glu	Val	Leu	Asp	Leu	Lys	Leu	Gln	Gly	Glu	Leu	Ser	Tyr	Arg	Leu
			20					25					30		
Asn	Asp	His	Ile	Glu	Val	Lys	Gly	Leu	Ala	Met	Val	Arg	His	Ala	Val
			35				40					45			
Thr	Lys	Ser	Ser	His	Phe	Ile	Ala	Glu	Ala	Ser	Asn	Val	Val	Gln	Ala
			50			55					60				
Phe	Arg	Ala	Asn	Glu	Thr	Pro	Tyr	Val	Ala	Arg	Glu	Asn	Ile	Tyr	Leu
65					70				75						80
Leu	Lys	Asn	Lys	Asp	Asp	Pro	Met	Gln	Leu	Pro	Gly	Val	Ala	Leu	Thr
				85					90					95	

His Gly Gly Ile Phe Asn Lys Thr Glu Thr Ser Leu Arg Ser Tyr Leu
 100 105 110
 Gly Arg Leu Ala Leu Asp Tyr Asn Arg Gln Leu Ser Glu His Asn Ile
 115 120 125
 Arg Ala Phe Gly Phe Thr Glu Ile Arg Tyr Ala Asp Arg Ser Met Asn
 130 135 140
 Pro Phe Gln Gly Tyr Gly Ile Gln Tyr Asp Arg Gly Asn Gln Val Phe
 145 150 155 160
 Ser Asn Pro Leu Ile Phe Glu Lys Leu Ala Asn Glu Gly Asp Thr Tyr
 165 170 175
 Phe Ser Leu Thr Glu Arg Tyr Glu Arg Gly Val Thr Leu Ser Gly Ser
 180 185 190
 Ala Thr Tyr Gly Tyr Ala Gly Lys Tyr Ile Phe Asn Gly Val Phe Asn
 195 200 205
 Tyr Glu Gly Ala Asn Thr Ala Gly Lys Tyr Ser Arg Ser Arg Trp Leu
 210 215 220
 Pro Thr Trp Asn Ile Gly Ala Lys Trp Asn Leu Asp Gln Glu Lys Phe
 225 230 235 240
 Met Arg Lys His Thr Thr Ile Ser Arg Leu Ala Leu Arg Thr Ser Tyr
 245 250 255
 Gly Leu Thr Ala Lys Met Asn Glu Gln Ala Val Asn Ser Thr Thr Val
 260 265 270
 Phe Lys His Val Met Val Asn Arg Thr Leu Leu Lys Asp Arg Glu Asn
 275 280 285
 Ala Leu Arg Ile Leu His Leu Glu Asn Arg Asp Leu Thr Trp Glu Lys
 290 295 300
 Met Tyr Glu Leu Asn Phe Gly Leu Glu Leu Gly Leu Phe Gly Asn Arg
 305 310 315 320
 Ile Ser Ala Thr Phe Asp Val Tyr Gln Arg Asn Ser Phe Asp Leu Ile
 325 330 335
 Asp Leu Ile Arg Thr Ser Gly Val Gly Gly Gln Tyr Tyr Lys Tyr Ala
 340 345 350
 Asn Phe Gly Asp Met Arg Thr Arg Gly Val Glu Leu Ala Ile Gln Thr
 355 360 365
 Gln Asn Ile Leu Thr Asp Lys Phe Ser Trp Ser Thr Thr Val Thr Ile
 370 375 380
 Ser Gly Met Lys Gln Lys Ile Thr Arg Leu Leu Asn Thr Pro Asn Thr
 385 390 395 400
 Phe Asp Met Val Ala Gly Thr Gly Arg Gly Asn Ile Val Gly Phe Pro
 405 410 415
 Arg Gly Ser Leu Phe Ser Phe Asn Phe Gln Gly Leu Asn Ser Asn Gly
 420 425 430
 Leu Pro Thr Phe Asp Phe Gly Leu Tyr Pro Ser Asn Lys Gly Ala Asn
 435 440 445
 Ser Glu Ile Ser Gly Ala Asp Phe Leu Asp Ala Gln Tyr Ser Lys Ser
 450 455 460
 Tyr Leu Ile Tyr His Gly Pro Ile Glu Pro Gln Tyr Ile Gly Gly Ile
 465 470 475 480
 Ser Asn Thr Phe Lys Tyr Lys Asn Trp Glu Phe Ser Cys Phe Val Thr
 485 490 495
 Met Gln Ala Gly Asn Lys Ile Arg Met Asn Pro Ser Phe Asp Pro Ala
 500 505 510
 Phe Ala Asp Leu Asn Val Phe Ser Lys Glu Tyr Tyr Asn Arg Trp Leu
 515 520 525
 Asn Pro Gly Asp Glu Arg Lys Thr Asn Ile Pro Val Ile Pro Ser Gln
 530 535 540
 Asp Leu Ile His Asn Ile Gly Lys Glu Asn Ile Glu Lys Ala Tyr Asn
 545 550 555 560
 Thr Tyr Asn Tyr Ser Gln Asn Arg Val Ala Asp Gly Ser Phe Val Arg

565 570 575
 Met Lys Asn Ile Ser Leu Gly Tyr Arg Leu Pro Gln Arg Phe Leu Ser
 580 585 590
 His Leu Lys Ile Lys Gln Met Asn Val Lys Val Asn Val Thr Asn Pro
 595 600 605
 Phe Leu Ile Tyr Ser Asp Arg Lys Leu Asn Gly Gln Asp Pro Glu Phe
 610 615 620
 Tyr Arg Ser Gly Gly Val Ser Leu Pro Thr Pro Lys Gln Tyr Thr Met
 625 630 635 640
 Thr Leu Asn Val Glu Phe
 645

<210> 7259
 <211> 246
 <212> PRT
 <213> B.fragilis

<400> 7259
 Pro Leu Trp Val Ile Asp Gly Ala Val Tyr Glu Asp Leu Val Ser Leu
 1 5 10 15
 Thr Leu Asp Gln Leu Ala Ser Gly Asp Ala Val Thr Leu Ile Ser Ser
 20 25 30
 Ala Val Ala Gly Leu Asn Ala Ser Asp Ile Glu Asp Ile Gln Val Leu
 35 40 45
 Lys Asp Ala Ser Ala Thr Ser Ile Tyr Gly Ala Arg Ala Leu Asn Gly
 50 55 60
 Val Ile Val Ile Thr Thr Arg Ser Gly Lys Arg Asn Ala Pro Asn Arg
 65 70 75 80
 Phe Ser Tyr Ser Tyr Glu Leu Ser Met Arg Ser Ile Pro Ser Tyr Thr
 85 90 95
 Asn Phe Asp Leu Leu Asn Ser Gln Glu Ser Met Ser Val Tyr Gln Glu
 100 105 110
 Met Gly Arg Lys Gly Tyr Phe Ser Leu Gln Asn Thr Leu Tyr Gly Arg
 115 120 125
 Arg Ser Gly Val Tyr Tyr Gln Met Tyr Lys Ala Leu Asn Thr Ile Asp
 130 135 140
 Pro Ala Thr Gly Gln Tyr Tyr Leu Glu Asn Thr Asp Asp Val Lys Arg
 145 150 155 160
 Ala Phe Met Arg Glu Arg Glu Tyr Ala Asn Thr Asn Trp Phe Lys Glu
 165 170 175
 Leu Phe Thr His Arg Pro Ile His Thr His Thr Val Thr Phe Ser Gly
 180 185 190
 Gly Gly Glu Asn Ser Ala Met Tyr Ala Ser Ile Gly Phe Tyr Asp Asp
 195 200 205
 Arg Gly Trp Thr Leu Ala Asp Asn Val Lys Arg Ile Thr Ala Asn Ile
 210 215 220
 Lys Asn Ser Phe Tyr Trp Asn Glu Asp Lys Ile Lys Ala Thr Ile Ser
 225 230 235 240
 Ala Gln Gly Lys Ser Thr
 245

<210> 7260
 <211> 170
 <212> PRT
 <213> B.fragilis

<400> 7260
 Glu Ser Leu Ser Leu Cys His Ile Asp Cys Val Ser Leu His Ala Lys
 1 5 10 15

Thr Lys Lys Asp Asn Met Cys Gly Ile Val Gly Tyr Ile Gly Lys Arg
 20 25 30
 Glu Ala Tyr Pro Ile Leu Ile Lys Gly Leu Lys Arg Leu Lys Tyr Arg
 35 40 45
 Gly Tyr Asp Ser Ala Gly Val Ala Ile Ile Asn Asp Asn Gln Leu Leu
 50 55 60
 Asn Val Tyr Arg Pro Gln Gly Glu Thr Phe Val Phe Ala Ser Asp Gly
 65 70 75 80
 Ile Ile Glu Thr Pro Thr Val Ile Leu Gln Glu Phe Pro Ser Gln Ser
 85 90 95
 Tyr Ile Phe Arg Asn Ser Thr Tyr Thr Glu Val Pro Val Tyr Ser Phe
 100 105 110
 Ser Ser Phe Arg Pro Met His Gln Phe Cys Lys Ile Thr Ala Ser Arg
 115 120 125
 Ala Val Arg Pro Glu Thr Leu Lys Cys Ser Asp Ser Leu Ile Ile Arg
 130 135 140
 Glu Ala Phe Ser Asp Thr Leu Leu Gln Gly Gly Lys Asp Glu Ala Thr
 145 150 155 160
 Gly Ile Arg Glu Glu Ser Val Thr Met Glu
 165 170

<210> 7261

<211> 112

<212> PRT

<213> B.fragilis

<400> 7261

Lys His Lys Ser Phe Lys Thr Ile Thr Ile Met Cys Gly Ile Ala Gly
 1 5 10 15
 Ile Phe Asn Ile Lys Ile Gln Ser Arg Glu Leu Arg Asn Lys Ala Leu
 20 25 30
 Arg Met Ala Arg Lys Ile Arg His Arg Gly Pro Asp Trp Ser Gly Met
 35 40 45
 Tyr Cys Gly Gly Ser Ala Ile Leu Ala Thr Arg Ala Pro Phe His Ser
 50 55 60
 Arg Ser Ala Lys Arg Arg Thr Ala Ser Phe Ile His Pro Thr Gly Ser
 65 70 75 80
 Lys Tyr Trp Arg Leu Thr Ala Lys Ser Ile Thr Thr Val Thr Ser Ala
 85 90 95
 Pro Asn Met Pro Ala Ala Thr Ser Ser Gly Pro Gly Val Thr Val Arg
 100 105 110

<210> 7262

<211> 189

<212> PRT

<213> B.fragilis

<400> 7262

Asp Met Lys Ser Met Asn Tyr Ser Leu Ile Arg Thr Ile Cys Ala Leu
 1 5 10 15
 Val Ile Gly Leu Val Leu Val Leu Trp Pro Asp Ala Ala Ile Asn Tyr
 20 25 30
 Ile Val Ile Thr Ile Gly Val Leu Phe Leu Ile Pro Gly Phe Ile Val
 35 40 45
 Leu Ile Gly Tyr Phe Gly Thr Lys Pro Glu Pro Gly Val Ser Arg Arg
 50 55 60
 Phe Pro Ile Glu Gly Val Gly Ser Leu Leu Phe Gly Leu Trp Leu Val
 65 70 75 80
 Thr Met Pro Gly Phe Phe Ala Asp Val Leu Met Phe Leu Leu Gly Phe

				85				90					95				
Ile	Leu	Ile	Met	Gly	Gly	Val	Gln	Gln	Ile	Ala	Ser	Leu	Ser	Met	Ala		
			100					105					110				
Arg	Arg	Trp	Thr	Pro	Val	Pro	Gly	Gly	Phe	Tyr	Val	Ile	Pro	Val	Leu		
		115					120					125					
Ile	Leu	Ile	Ala	Gly	Ile	Val	Ala	Leu	Phe	Asn	Pro	Thr	Gly	Ala	Arg		
	130					135					140						
Asn	Thr	Ala	Phe	Met	Ile	Ile	Gly	Val	Ser	Ser	Leu	Val	Tyr	Ala	Val		
145					150					155					160		
Ser	Glu	Leu	Ile	Asn	Trp	Phe	Lys	Phe	Ala	Arg	Arg	Arg	Pro	Lys	Thr		
			165					170						175			
Pro	Leu	Lys	Gly	Glu	Ile	Glu	Asp	Ala	Glu	Ile	Ile	Glu					
			180					185									

<210> 7263
 <211> 220
 <212> PRT
 <213> B.fragilis

Asp	Ser	Val	Ser	Leu	Cys	Gly	Glu	Pro	Asn	Phe	Lys	Pro	Lys	Met	Met		
1			5						10					15			
Asn	Asp	Lys	Leu	Ile	Lys	Val	Cys	Gly	Met	Arg	Glu	Ala	Glu	Asn	Ile		
		20						25					30				
Arg	Glu	Val	Glu	Gln	Leu	Lys	Val	Asp	Met	Ile	Gly	Phe	Ile	Phe	Tyr		
		35					40					45					
Pro	Lys	Ser	Pro	Arg	Cys	Leu	Tyr	Glu	Leu	Pro	Ala	Tyr	Met	Pro	Val		
	50				55					60							
Lys	Ala	Lys	Arg	Val	Gly	Val	Phe	Val	Asn	Glu	Asp	Lys	Lys	Glu	Ile		
65				70					75					80			
Glu	Ile	Phe	Ala	Asp	Arg	Phe	Ser	Leu	Asp	Tyr	Ile	Gln	Leu	His	Gly		
				85				90					95				
Asn	Glu	Ser	Pro	Glu	Tyr	Cys	His	Ser	Leu	Arg	Ala	Thr	Gly	Leu	Arg		
		100						105					110				
Leu	Ile	Lys	Ala	Phe	Ser	Ile	Ala	Arg	Arg	Lys	Asp	Phe	Glu	Asn	Ile		
	115					120						125					
Gly	Thr	Tyr	Glu	Glu	Ser	Cys	Asp	Tyr	Phe	Leu	Phe	Asp	Thr	Lys	Cys		
	130				135					140							
Glu	Gln	His	Gly	Gly	Ser	Gly	Asn	Gln	Phe	Asp	Trp	Ser	Met	Leu	Asn		
145				150					155					160			
Ser	Tyr	Lys	Gly	Lys	Lys	Pro	Phe	Leu	Leu	Ser	Gly	Gly	Ile	Asn	Pro		
			165					170					175				
Tyr	Ser	Pro	Pro	Thr	Leu	Lys	Glu	Leu	Arg	His	Pro	Gln	Leu	Ala	Gly		
		180						185					190				
Phe	Asp	Leu	Asn	Ser	Arg	Phe	Glu	Thr	Lys	Pro	Gly	Leu	Lys	Asp	Val		
	195					200						205					
Glu	Arg	Leu	Arg	His	Phe	Leu	Glu	Glu	Leu	Arg	Lys						
	210					215					220						

<210> 7264
 <211> 774
 <212> PRT
 <213> B.fragilis

Phe	Tyr	Tyr	Pro	Lys	Met	Lys	Met	Lys	Lys	Tyr	Ile	Phe	Phe	Leu	Val		
1				5					10					15			
Ser	Leu	Cys	Cys	Ala	Leu	Leu	Pro	Ala	Met	Ala	Asp	Gln	Pro	Glu	His		
			20					25					30				

Pro Glu Leu Lys Ala Ser Asp Ala Asn Ile Ile Gly His Val Leu Asp
 35 40 45
 Lys Lys Thr Gly Glu His Leu Ser Tyr Ile Thr Ile Ala Leu Lys Gly
 50 55 60
 Thr Thr Ile Gly Thr Val Thr Asp Ala Thr Gly His Tyr Phe Leu Lys
 65 70 75 80
 Asn Leu Pro Glu Gly Asn Phe Val Leu Glu Ala Ser Ser Val Gly Tyr
 85 90 95
 Lys Thr Ile Ser Arg Asn Val Ser Leu Arg Lys Gly Lys Thr Leu Glu
 100 105 110
 Glu Asn Phe Glu Leu Glu Glu Asp Ala Val Ala Leu Asp Gly Val Val
 115 120 125
 Val Ser Ala Asn Arg Ser Val Thr Lys Arg Arg Leu Ala Pro Thr Leu
 130 135 140
 Val Asn Val Val Asp Met Lys Met Phe Glu Asn Thr Asn Ser Pro Thr
 145 150 155 160
 Leu Ser Gln Gly Leu Asn Phe Gln Pro Gly Val Arg Val Glu Thr Asn
 165 170 175
 Cys Gln Asn Cys Gly Phe Gln Gln Val Arg Ile Asn Gly Leu Asp Gly
 180 185 190
 Pro Tyr Thr Gln Ile Leu Ile Asp Ser Arg Pro Ile Phe Ser Ala Leu
 195 200 205
 Ser Gly Val Tyr Gly Leu Glu Gln Ile Pro Ala Asn Met Ile Glu Arg
 210 215 220
 Val Glu Val Met Arg Gly Gly Gly Ser Ala Leu Phe Gly Ser Ser Ala
 225 230 235 240
 Ile Ala Gly Thr Ile Asn Ile Ile Thr Lys Glu Pro Leu Arg Asn Ser
 245 250 255
 Gly Gln Leu Ala His Thr Leu Thr Ser Ile Gly Gly Ser Ser Ser Phe
 260 265 270
 Asp Asn Asn Thr Ser Leu Asn Ala Ser Leu Val Thr Asp Asp His Arg
 275 280 285
 Ala Gly Leu Tyr Val Phe Gly Gln Asn Arg His Arg Asp Ala Tyr Asp
 290 295 300
 His Asp Gly Asp Gly Tyr Ser Glu Met Pro Lys Leu Lys Asn Gln Thr
 305 310 315 320
 Val Gly Phe Arg Ser Phe Leu Lys Thr Ser Thr Tyr Ser Lys Leu Thr
 325 330 335
 Phe Glu Tyr His His Leu Gln Glu Phe Arg Arg Gly Gly Asn Leu Leu
 340 345 350
 Asn Arg Pro Pro His Glu Ala Asp Ile Ala Glu Gln Ile Gln His Ser
 355 360 365
 Ile Asn Gly Gly Gly Leu Lys Phe Asp Tyr Phe Ala Pro Asn Glu Lys
 370 375 380
 His Arg Leu Thr Val Tyr Thr Ser Ala Gln His Thr Asp Arg Asp Ser
 385 390 395 400
 Tyr Tyr Gly Ser Lys Lys Asp Gln Asn Ala Tyr Gly Lys Thr Thr Asp
 405 410 415
 Leu Thr Phe Ile Gly Gly Ser Gln Tyr Val Tyr Ser Phe Gly Lys Cys
 420 425 430
 Leu Phe Met Pro Ala Asp Leu Thr Ala Gly Leu Glu Tyr Asn Arg Asp
 435 440 445
 Asn Leu Lys Asp Asp Met Trp Gly Tyr Asn Arg Tyr Thr Lys Gln Thr
 450 455 460
 Val Asn Ile Gly Ser Ala Phe Leu Gln Asn Glu Trp Lys Asn Glu Lys
 465 470 475 480
 Trp Ser Ile Leu Leu Gly Gly Arg Leu Asp Lys His Asn Leu Ile Asn
 485 490 495
 His Val Ile Phe Ser Pro Arg Ala Asn Leu Arg Phe Asn Pro Ser Glu

100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490

500					505					510					
Asp	Ile	Asn	Leu	Arg	Leu	Ser	Tyr	Ser	Ser	Gly	Phe	Arg	Ala	Pro	Gln
515					520					525					
Ala	Phe	Asp	Glu	Asp	Leu	His	Ile	Glu	Asn	Val	Gly	Gly	Thr	Val	Ser
530					535					540					
Met	Ile	Glu	Arg	Ala	Lys	Asn	Leu	Lys	Glu	Glu	Lys	Ser	Gln	Ser	Phe
545					550					555					
Ser	Ala	Ser	Ala	Asp	Met	Tyr	His	Arg	Phe	Gly	Ala	Phe	Gln	Val	Asn
565					570					575					
Phe	Leu	Val	Glu	Gly	Phe	Tyr	Thr	Arg	Leu	Ser	Asp	Val	Phe	Val	Leu
580					585					590					
Glu	Asn	Ile	Gly	Glu	Arg	Asp	Gly	Ile	Leu	Ile	Lys	Glu	Arg	Arg	Asn
595					600					605					
Gly	Ser	Gly	Ala	Lys	Val	Leu	Gly	Leu	Ser	Met	Glu	Gly	Lys	Met	Ala
610					615					620					
Tyr	Leu	Ser	Leu	Phe	Gln	Leu	Gln	Ala	Gly	Val	Thr	Leu	Gln	Gln	Ser
625					630					635					
Arg	Tyr	Asp	Glu	Pro	Glu	Lys	Trp	Ser	Glu	Thr	Ala	Pro	Ala	Glu	Lys
645					650					655					
Lys	Ile	Phe	Arg	Thr	Pro	Asn	Thr	Tyr	Gly	Tyr	Phe	Thr	Ala	Thr	Tyr
660					665					670					
Thr	Pro	Ile	Lys	Pro	Leu	Ser	Leu	Ser	Leu	Ser	Gly	Thr	Tyr	Thr	Gly
675					680					685					
Ser	Met	Leu	Val	Gln	His	Met	Ala	Gly	Tyr	Ile	Asp	Lys	Asp	Val	Ala
690					695					700					
Val	Asn	Thr	Arg	Asp	Phe	Phe	Asp	Met	Gly	Val	Lys	Val	Ala	Tyr	Asp
705					710					715					
Phe	Lys	Leu	Tyr	Lys	Ser	Val	Asp	Leu	Gln	Leu	Ser	Ala	Gly	Val	Gln
725					730					735					
Asn	Val	Phe	Asn	Ala	Tyr	Gln	Asn	Asp	Phe	Asp	Gln	Gly	Val	Glu	Arg
740					745					750					
Asp	Ser	Gly	Tyr	Ile	Tyr	Gly	Pro	Ala	Ala	Pro	Arg	Ser	Tyr	Phe	Ala
755					760					765					
Gly	Ile	Lys	Ile	Ser	Tyr										
770															

<210> 7265

<211> 214

<212> PRT

<213> B.fragilis

<400> 7265

Pro	Thr	Leu	Pro	Ile	Met	Ala	Leu	Lys	Glu	Lys	Ile	Lys	Gln	Asn	Pro
1				5					10					15	
Ala	Leu	Lys	Gln	Ala	Val	His	Arg	Phe	Ile	Met	His	Pro	Val	Lys	Thr
			20					25					30		
Arg	Pro	Asn	Trp	Trp	Ile	Arg	Ile	Phe	Ser	Phe	Leu	Tyr	Leu	Lys	Arg
		35				40					45				
Gly	Lys	Gly	Ser	Val	Ile	Tyr	Arg	Ser	Val	Arg	Gln	Asp	Leu	Pro	Pro
	50					55					60				
Phe	Asn	Leu	Phe	Ser	Leu	Gly	Lys	Tyr	Ser	Val	Val	Glu	Asp	Phe	Ser
65					70					75					80
Cys	Leu	Asn	Asn	Ala	Val	Gly	Asp	Leu	Ile	Ile	Gly	Glu	Tyr	Thr	Arg
				85					90					95	
Ile	Gly	Leu	Gly	Asn	Thr	Ile	Ile	Gly	Pro	Ala	Thr	Ile	Gly	Asn	His
			100					105					110		
Val	Asn	Leu	Ala	Gln	Asn	Val	Thr	Val	Thr	Gly	Leu	Asn	His	Asn	Tyr
		115					120					125			
Gln	Asp	Thr	Gly	Lys	Arg	Ile	Asp	Glu	Gln	Gly	Val	Ser	Thr	Gln	Pro

130		135		140
Ile Thr Ile Glu Asp Asp Val Trp Val Gly Ala Asn Ser Val Ile Leu				
145		150		155
Pro Gly Val Thr Leu Gly Lys His Cys Val Val Ala Ala Gly Ser Val				160
		165		170
Val Ser Arg Ser Ile Pro Pro Tyr Ser Val Cys Ala Gly Ser Pro Ala				175
		180		185
Lys Val Val Lys Gln Phe Asn Pro Glu Ser Arg Thr Trp Glu Lys Thr				190
		195		200
Val Ser Lys Asn Gly Lys				205
210				

<210> 7266

<211> 210

<212> PRT

<213> B.fragilis

<400> 7266

Gln Ser Pro Pro Pro Leu Pro Ile Tyr Ser Asp Ser Tyr Pro Ala Ile				
1	5		10	15
Ser Ile Ile Asn Gly Asp Phe Leu Phe Leu Pro Asp Arg Leu Ser Leu				
	20		25	30
Pro Tyr His Leu Lys Thr Arg Ser Glu Met Asn Lys Ile Gly Val Phe				
	35		40	45
Tyr Gly Ser Thr Thr Gly Thr Thr Glu Asp Val Ala His Arg Ile Ala				
	50		55	60
Glu Lys Leu Asn Val Pro Asn Gly Asp Ile His Asp Ala Ser Lys Leu				
	65		70	75
Asn Asp Glu Leu Val Lys Glu Tyr Asp Val Leu Val Leu Gly Thr Ser				
	85		90	95
Thr Trp Gly Ala Gly Glu Leu Gln Asp Asp Trp Tyr Asp Gly Ile Lys				
	100		105	110
Val Leu Lys Lys Ala Asp Leu Ser His Lys Phe Val Ala Leu Phe Gly				
	115		120	125
Cys Gly Asp Ser Asp Ser Tyr Ser Asp Thr Phe Cys Asp Gly Ile Gly				
	130		135	140
Ile Leu Tyr Glu Glu Leu Lys Asp Thr His Cys Thr Phe Cys Gly Ala				
	145		150	155
Thr Asp Pro Ser Gly Tyr Thr Phe Asp Ser Ser Val Ala Val Ile Asn				
	165		170	175
Gly Lys Phe Val Gly Leu Pro Leu Asp Glu Val Asn Glu Asp Gly Lys				
	180		185	190
Thr Asp Glu Arg Ile Ala Gln Trp Thr Glu Ala Leu Lys Lys Glu Cys				
	195		200	205
Ile Asn				
210				

<210> 7267

<211> 486

<212> PRT

<213> B.fragilis

<400> 7267

Asn Ser Val Leu Leu Tyr Gly Glu Ser Lys Ile Lys Leu Lys Arg Asn				
1	5		10	15
Glu Ile Met Asn Ala Phe Asn Tyr Thr Thr His Ser Lys Gln Val Leu				
	20		25	30
Gly Asp Leu His Thr Pro Val Ser Ile Tyr Leu Lys Val Arg Asp Met				
	35		40	45

Tyr Pro Gln Ser Ala Leu Met Glu Ser Ser Asp Tyr His Ala Gly Glu
 50 55 60
 Asn Ser Leu Ser Phe Ile Ala Leu Cys Pro Leu Ala Ser Ile Gly Ile
 65 70 75 80
 Asn Ser Gly Ile Val Thr Thr Thr Tyr Pro Asp Asn Thr Arg Arg Glu
 85 90 95
 Glu Pro Leu Ser Gln Ser Phe Arg Val Glu Asn Ala Leu Asn Arg Phe
 100 105 110
 Ile Asn Arg Phe His Val Glu Gly Asp Asp Lys Lys Phe Cys Gly Leu
 115 120 125
 Tyr Gly Tyr Thr Thr Phe Asn Ala Val Lys Tyr Phe Glu His Ile Pro
 130 135 140
 Val Lys Glu Ser His Asp Glu Gln Asn Asp Ala Pro Asp Leu Leu Tyr
 145 150 155 160
 Ile Leu Tyr Lys Tyr Ile Ile Val Phe Asn His Phe Lys Asn Glu Leu
 165 170 175
 Thr Leu Val Glu Met Leu Ala Glu Gly Glu Glu Ser Asn Leu Ser Gln
 180 185 190
 Leu Glu Ser Ala Ile Glu Asn Arg Asn Tyr Ala Ser Tyr Asn Phe Ser
 195 200 205
 Val Thr Gly Pro Val Thr Ser Thr Ile Thr Asp Glu Glu His Lys Ala
 210 215 220
 Asn Val Arg Lys Gly Ile Ala His Cys Leu Arg Gly Asp Val Phe Gln
 225 230 235 240
 Ile Val Leu Ser Arg Arg Phe Ile Gln Pro Tyr Ala Gly Asp Asp Phe
 245 250 255
 Lys Val Tyr Arg Ala Leu Arg Ser Ile Asn Pro Ser Pro Tyr Leu Phe
 260 265 270
 Tyr Phe Asp Phe Gly Gly Tyr Arg Ile Phe Gly Ser Ser Pro Glu Thr
 275 280 285
 His Cys Lys Val Glu Ser Gly Gln Ala Tyr Ile Asp Pro Ile Ala Gly
 290 295 300
 Thr Thr Arg Arg Thr Gly Asp Thr Ile Lys Asp Lys Glu Leu Thr Glu
 305 310 315 320
 Ala Leu Leu Ala Asp Pro Lys Glu Asn Ala Glu His Val Met Leu Val
 325 330 335
 Asp Leu Ala Arg Asn Asp Leu Ser Arg Asn Cys His Asp Val Arg Val
 340 345 350
 Val Phe Tyr Lys Glu Pro Gln Tyr Tyr Ser His Val Ile His Leu Val
 355 360 365
 Ser Arg Val Ser Gly Ala Leu Asn Asn Gly Ala Asn Pro Leu Lys Thr
 370 375 380
 Phe Ile Asp Thr Phe Pro Ala Gly Thr Leu Ser Gly Ala Pro Lys Val
 385 390 395 400
 Arg Ala Met Gln Leu Ile Ser Glu Ile Glu Pro His Asn Arg Gly Ala
 405 410 415
 Tyr Gly Gly Cys Ile Gly Phe Ile Gly Leu Asn Gly Glu Leu Asn Gln
 420 425 430
 Ala Ile Thr Ile Arg Thr Phe Val Ser Arg Asn Asn Glu Leu Trp Phe
 435 440 445
 Gln Ala Gly Gly Gly Ile Val Ala Arg Ser Gln Asp Glu Tyr Glu Leu
 450 455 460
 Gln Glu Val Asn Asn Lys Leu Gly Ala Leu Lys Lys Ala Ile Asp Leu
 465 470 475 480
 Ala Val Lys Leu Lys Asn
 485

<210> 7268

<211> 69

<212> PRT
 <213> B.fragilis

<400> 7268

Asn	Tyr	Pro	Pro	His	Ile	Arg	Lys	Ala	Ile	Lys	Ala	Phe	Leu	Tyr	Tyr
1				5					10					15	
Leu	Lys	Ile	Pro	Lys	Asn	Thr	Ile	Phe	Phe	Leu	Pro	Lys	Lys	Leu	Ser
			20					25					30		
Ile	Thr	Tyr	Ser	Ser	Phe	Thr	Phe	Lys	Asn	Leu	Tyr	Leu	Ile	Glu	Asn
		35					40					45			
His	Leu	Lys	Leu	Phe	Asn	Thr	Leu	Asn	Leu	Tyr	Leu	Ile	Pro	Asn	Ile
	50					55					60				
Leu	Phe	Tyr	Leu	Lys											
65															

<210> 7269

<211> 340

<212> PRT

<213> B.fragilis

<400> 7269

Glu	Arg	Ser	Thr	Ile	Val	Thr	Ile	Asn	Ile	Lys	Asn	Val	Glu	Arg	Met
1				5					10					15	
Glu	Asn	Val	Val	Pro	Pro	Phe	Lys	Val	Asp	Val	Ala	Gly	Thr	Phe	Leu
			20					25					30		
Leu	Pro	Ala	Ala	Leu	Arg	Glu	Ala	Arg	Glu	Gln	Tyr	Arg	Asn	Glu	Gln
		35					40					45			
Ile	Ser	Leu	Leu	Thr	Leu	Arg	Ala	Val	Glu	Asp	Ala	Glu	Ile	Arg	Asn
	50					55					60				
Leu	Val	Asp	Arg	Leu	Lys	Ala	Glu	Gly	Leu	Lys	Val	Val	Thr	Asp	Gly
65					70					75				80	
Arg	Phe	Arg	Ser	Asp	Ala	Trp	Pro	Leu	Asp	Phe	Met	Cys	Gly	Leu	Asp
			85					90					95		
Gly	Ile	Arg	Phe	Arg	Asp	Asp	Arg	Lys	Thr	Ser	Val	Glu	Leu	Thr	Gly
		100						105					110		
Arg	Ile	Asp	Val	His	His	His	Pro	Val	Leu	Asp	Asp	Phe	Val	Phe	Leu
	115						120					125			
Thr	Gly	Val	Thr	Gly	Gly	Asp	Val	Ile	Ala	Lys	Gln	Val	Leu	Pro	Ala
	130					135					140				
Pro	Ser	Arg	Leu	Leu	Ala	Glu	Leu	Met	Lys	Asp	Ala	Asn	Arg	Thr	Glu
145					150					155				160	
Leu	Asp	Ser	Val	Tyr	Pro	Asp	Arg	Glu	Ile	Leu	Leu	Val	Asp	Leu	Ala
			165						170					175	
Gln	Thr	Tyr	Gln	Lys	Leu	Ile	Met	Glu	Leu	Tyr	Arg	Ser	Gly	Cys	Arg
		180						185					190		
Tyr	Leu	Gln	Leu	Asp	Asp	Ala	Thr	Arg	Thr	Val	Thr	Asp	Asn	Ala	Ile
	195					200						205			
Arg	Val	Asn	Asn	Met	Ala	Leu	Glu	Asn	Leu	Pro	Ala	Asp	Leu	Phe	Ile
	210				215						220				
Ala	Phe	His	Ser	Pro	Thr	Glu	Met	Leu	Phe	Ser	Leu	Gln	Gly	Ile	His
225				230						235				240	
Ala	Phe	Phe	Leu	Asp	Tyr	Asp	Ser	Glu	Cys	Cys	Gly	Lys	Asn	Arg	Leu
			245						250					255	
Leu	Trp	Phe	Ile	Arg	Glu	Lys	Gln	Ser	Val	Phe	Gly	Phe	Val	Leu	Ser
		260					265						270		
His	Tyr	Pro	Val	Glu	Glu	Glu	Leu	Glu	Glu	Leu	Arg	Ala	Lys	Ile	Asp
	275						280					285			
Gln	Ile	Ile	Arg	Tyr	Ile	Pro	Ser	His	Arg	Phe	Ser	Leu	Cys	Ile	Pro
	290					295					300				

Asn Ala Glu Val Leu Pro Ser Glu Ser Tyr Glu Ala Ala Glu Glu Lys
 305 310 315 320
 Gln Trp His Thr Leu Lys Met Ala Glu Met Val Ala Gly Glu Leu Trp
 325 330 335
 Pro Glu Glu Gly
 340

<210> 7270
 <211> 449
 <212> PRT
 <213> B.fragilis

<400> 7270

Ser Lys Gly Thr Pro Leu Arg Leu Ile His Ser Asp Thr Val Glu His
 1 5 10 15
 Gly Gly Glu Phe Val Ala Val Leu Gly Ile Val Asp Ala Leu Gly Gly
 20 25 30
 Cys Ser Glu Asn Val Asp Val Leu Gly Ile Glu Thr Gln Gly Glu Ile
 35 40 45
 Val Arg Tyr Leu Ser Ala Gly Gly Asn Asn Asp Ser Val Arg Ile Leu
 50 55 60
 Gln Phe Lys Asp Ile His His Ala Phe Glu Cys Gln Phe Val Lys Val
 65 70 75 80
 Lys Pro Val Thr His Ile Ile Val Gly Arg Tyr Gly Phe Gly Ile Ile
 85 90 95
 Val Asp His His Arg Thr Pro Ser Phe Leu Thr Asp Arg Ile Lys Arg
 100 105 110
 Leu His Pro Ala Pro Val Glu Leu His Gly Arg Thr Asp Pro Val Gly
 115 120 125
 Thr Arg Thr Glu Asn Asp Asp Arg Thr Met Val Thr Gln Val Ser Asp
 130 135 140
 Val Val Gly Cys Ala Ala Ile Gly Gln Val Lys Ile Ile Gly Leu Cys
 145 150 155 160
 Arg Ile Phe Gly Ser Gln Arg Ile Asp Leu Leu His His Gly Asn Asn
 165 170 175
 Ala Gln Ala Leu Thr Val Ile Ala Asp Ile Lys Ala Ala Val Phe His
 180 185 190
 Ile Ala Phe Val Ala Asp Gly Thr Cys Asn Leu Glu Ile Gly Glu Ser
 195 200 205
 Leu Thr Leu Gly Leu Leu Glu Val Gly Arg Gln Val Gly Tyr Leu
 210 215 220
 Leu Val Ile Val Pro Pro Leu Met Glu Phe Leu Arg Ser Ile His Asp
 225 230 235 240
 Ile His Gln Phe Leu Glu Glu Pro Leu Val Asp Leu Ser Gln Phe Val
 245 250 255
 His Leu Ile Asp Gly Ile Ser Gly Thr Glu Ser Leu Arg Asp Asp Lys
 260 265 270
 Asp Thr Phe Ile Gly Arg Phe Val Gln Cys Phe Val Asp Val Gly Asp
 275 280 285
 Asn Glu Phe Leu Val Phe His Lys Thr Met His Pro Leu Ser Asp His
 290 295 300
 Ser Gln Ala Leu Leu Asn Arg Phe Leu Lys Ser Ala Ala Asn Gly His
 305 310 315 320
 Tyr Leu Thr Asp Gly Leu His Arg Arg Ala Glu Phe Leu Val His Thr
 325 330 335
 Val Glu Leu Thr Glu Val Pro Thr Arg Asn Phe Ala Asp Tyr Ile Ile
 340 345 350
 Glu Cys Arg Leu Lys Glu Gly Thr Gly Gly Phe Arg His Arg Val Leu
 355 360 365

Gln Val Glu Gln Pro Val Ala Lys Ser Glu Phe Cys Ser His Lys Gly
 370 375 380
 Lys Arg Ile Thr Gly Ser Leu Gly Ser Gln Gly Arg Arg Thr Ala Gln
 385 390 395 400
 Ala Gly Ile His Leu Asp His Ala Ile Val Phe Thr Phe Gly Val Glu
 405 410 415
 Ser Ile Leu His Val Thr Phe Ser His Asn Ala Asp Val Ala Asp Asp
 420 425 430
 Ala Asp Gly Glu Leu Ala Gln Phe Met Ile Leu Leu Ile Gly Gln Gly
 435 440 445
 Leu

<210> 7271
 <211> 813
 <212> PRT
 <213> B.fragilis

<400> 7271
 Ala Lys Gln Thr Gly Met Lys Thr Ser Ile Asn Lys Leu Cys Ile Ala
 1 5 10 15
 Ala Ser Ile Leu Val Thr Ala Ala Gly Ile Ser Ala Cys Val Asp Asp
 20 25 30
 Asn Lys Thr Leu Tyr Asp Pro Glu Tyr Lys Thr Pro Asn Pro Met Glu
 35 40 45
 Glu Ile Ser Ala Pro Thr Gly Phe Asp Trp Ser Ser Thr His Ala Ile
 50 55 60
 Lys Phe Asn Val Glu Val Asn Asp Glu Phe Asp Gly Gln Tyr Tyr Tyr
 65 70 75 80
 Thr Val Glu Ile Val Asp Lys Asn Pro Leu Glu Ala Thr Thr Glu Glu
 85 90 95
 Pro Tyr Asn Thr Leu Ala Lys Gly Val Ala Arg Lys Gly Glu Thr Tyr
 100 105 110
 Gln Thr Glu Val Val Ser Ser Lys Asp Thr Lys Tyr Leu Tyr Val Arg
 115 120 125
 Gln Thr Asp Pro Arg Gly Arg Asp Arg Ile Lys Gln Val Glu Ile Asp
 130 135 140
 Glu Ser Thr Ser His Ile Gln Cys Ser Phe Thr Gly Thr Ser Ala Ile
 145 150 155 160
 Lys Thr Arg Ala Phe Ala Thr Thr Lys Gly Asn Asn Gly Gly Ile Asp
 165 170 175
 Ile Pro Lys Arg Thr Glu Gln Asn Tyr Asp Ile Ser Arg Ala Ile Pro
 180 185 190
 Val Thr Ser Pro Ser Gln Val Leu Gln Gly Gly Gln Thr Tyr Ile Val
 195 200 205
 Thr Gly Asn Phe Ser Gly Lys Phe Thr Asp Ile Ser Leu Ser Asn Ser
 210 215 220
 Asn Lys Ala Thr Val Tyr Ile Gln Gly Thr Trp Glu Leu Ala Gln Val
 225 230 235 240
 Thr Gln Asp Phe Leu Asp Ile Ile Val Leu Lys Asp Gly Lys Ile Asn
 245 250 255
 Gly Lys Tyr Leu Met Leu Gln Asn Thr Ser Thr Leu Thr Ile Gln Ser
 260 265 270
 Gly Ala Glu Val Ser Leu Ser Asp Gln Leu Ile Cys Asn Thr Tyr Ser
 275 280 285
 Thr Ile Cys Asn Phe Gly Asp Leu Lys Thr Lys Asn Met Lys Leu Asn
 290 295 300
 Thr Asn Asp Ile Leu Tyr Asn Gly His Lys Thr Asp Ile Thr Asn Ser
 305 310 315 320

Leu Asp Ala Ser Gln Gly Gly Asn Ile His Asn Phe Gly Lys Leu Asp
 325 330 335
 Val Glu Asn Thr Ile Lys Leu Asn Thr Pro Ser Ile Val Tyr Asn Ala
 340 345 350
 Pro Glu Cys Lys Ile Glu Ala Lys Thr Tyr Glu Ala Ala Gly Ser Thr
 355 360 365
 Asn Val Asn Phe Gly Glu Met Glu Phe Asp Thr Tyr Asp Ser Gly Lys
 370 375 380
 Ala Gly Gly Ser Leu Tyr Asn Asn Cys Met Leu Phe Val Glu His Met
 385 390 395 400
 Lys Ala Gly Gly Ile Val Tyr Leu Asp His Gly Val Ile Ala Glu Glu
 405 410 415
 Lys Glu Asp Asp Glu Glu Asn Glu Leu Phe Glu Glu Ala Asp Asp Ile
 420 425 430
 Glu Phe Tyr Asp Asn Ala Lys Val Thr Leu Ala Asn Gly Ser Met Ile
 435 440 445
 Lys Ala Lys Asn Ile Ile Ala Lys Ser Gly Leu Ser Val Asn Gly Glu
 450 455 460
 Gly Asn Glu Thr Ser Leu Leu Lys Ala Thr Glu Lys Val Gln Ile Gln
 465 470 475 480
 Asn Trp Asp Val Arg Phe Asn Gly Arg Leu Cys Ile Thr Gly Lys Ile
 485 490 495
 Ser Cys Ser Asn Pro Asp Met Tyr Gln Ala Gly Ser Glu Val Thr Phe
 500 505 510
 Ser Glu Ser Pro Asp Val Ile Ile Thr Gly Cys Asn Gly Lys Ala Glu
 515 520 525
 Val Pro Asp Pro Ala Pro Glu Pro Ser Asp Pro Val Phe Pro Ile Ile
 530 535 540
 Val Asp Asp Asn His Asn Tyr Thr Tyr Leu Phe Glu Asp Gln Trp Pro
 545 550 555 560
 Leu Tyr Gly Asp Tyr Asp Met Asn Asp Ile Val Leu Glu Val Lys Lys
 565 570 575
 Arg Lys Ile Ser Ile Asp Lys His Asn Lys Val Thr Glu Phe Asp Leu
 580 585 590
 Ser Val Glu Leu Arg Ala Val Gly Ala Gln Lys Thr Ile Ala Ala Ala
 595 600 605
 Ile Met Phe Asp Glu Ile Pro Ala Ser Ala Val Thr Gln Ala Val Thr
 610 615 620
 Tyr Ala Asp Asn Tyr Gln Pro Val Ser Phe Glu Leu Thr Asp Lys Asn
 625 630 635 640
 Ile Glu Lys Gly Gln Glu Tyr Ala Val Val Pro Leu Phe Asp Asn Ala
 645 650 655
 His Ala Leu Met Glu Arg Pro Thr Gly Ser Phe Val Asn Thr Ile Ser
 660 665 670
 Gly Ser Asp Asn Asn Gln Lys Asn Thr Gln Thr Ile His Phe Thr Leu
 675 680 685
 Arg Phe Asp Ser Ser Val Ala Pro Ser Ser Asp Ala Leu Asn Ile Asn
 690 695 700
 Asn Leu Asn Ile Phe Ile Ile Thr Asp Arg Gly Ser Lys Arg Lys Glu
 705 710 715 720
 Ile His Val Ala Gly Tyr Arg Pro Thr Leu Leu Ala Asn Thr Glu Leu
 725 730 735
 Phe Gly Gly Asn Asn Asp Ala Ser Ser Leu Asn Gly Lys Lys Tyr Tyr
 740 745 750
 Ile Ser Lys Asp Asn Leu Ala Trp Gly Ile Met Val Pro Thr Gln Phe
 755 760 765
 Lys Trp Pro Leu Glu Tyr Thr Gln Ile Gln Lys Ala Tyr Ser Gln Phe
 770 775 780
 Ala Gly Trp Val Thr Thr Gly Gly Ala Asp Asn Lys Lys Trp Trp Asn

785

790

795

800

Asp Phe Asp Asn Thr Lys Val Phe Gln Thr Asn Lys Asn
805 810

<210> 7272

<211> 101

<212> PRT

<213> B.fragilis

<400> 7272

Gly Lys Arg Thr Asp Ser Gly Asn Asn Gln Leu Leu His Asp Gln Cys
1 5 10 15
Pro Asp His Glu Arg Gly Pro Gly Ile Tyr Arg Pro Glu Ser Val Arg
20 25 30
Arg Gly Glu Arg Thr Leu Phe Met Gly Lys Lys Leu Gln Asn Gly Thr
35 40 45
Ser Ser Trp Arg Phe Phe Asp Gln Met Leu Tyr Glu Asp Asn Val Val
50 55 60
Arg Thr Pro Gly Val Gly Phe Gly Pro Ser Gly Glu Gly Tyr Ile Arg
65 70 75 80
Leu Thr Ala Phe Gly Glu Arg Asp Asp Cys Ile Glu Ala Met Arg Arg
85 90 95
Ile Lys Asn Arg Leu
100

<210> 7273

<211> 446

<212> PRT

<213> B.fragilis

<400> 7273

Asn Ile Ile Ala Asn Asn Trp Asn Leu Leu Ala Cys Ser Tyr Phe Leu
1 5 10 15
Ser Leu Ser Lys Arg Arg Ile Asn Arg Asn Arg Asn Met Lys Arg Val
20 25 30
Ile Phe Ser Leu Ser Phe Ser Leu Phe Ala Leu Leu Met Tyr Gly Gln
35 40 45
Ile Thr Leu Glu Glu Cys Gln Arg Lys Thr Arg Glu Asn Tyr Pro Leu
50 55 60
Val Arg Gln Tyr Gly Leu Ile Glu Lys Thr Lys Glu Tyr Asn Leu Ala
65 70 75 80
Asn Ala Ser Lys Gly Tyr Leu Pro Gln Phe Thr Leu Ser Gly Lys Ala
85 90 95
Ser Trp Gln Ser Glu Val Thr Glu Leu Pro Val Gln Val Pro Gly Val
100 105 110
Asp Ile Lys Gly Leu Pro Lys Asp Gln Tyr Gln Val Met Leu Glu Leu
115 120 125
Lys Gln Asn Ile Trp Asp Gly Gly Glu Ile Arg Ser Arg Lys Glu Gln
130 135 140
Val Lys Ala Ser Ser Asp Val Asp Arg Glu Lys Leu Asn Val Asp Met
145 150 155 160
Tyr Ala Leu Thr Glu Arg Val Asn Gln Val Tyr Phe Gly Ile Leu Leu
165 170 175
Leu Asp Glu Gln Leu Arg Gln Asn Gln Leu Phe Leu Glu Asp Leu Glu
180 185 190
Arg Thr His Lys Gln Ile Ser Ser Tyr Ile Glu Asn Gly Ile Ala Ser
195 200 205
Gln Ser Asp Leu Asp Ala Val Ser Val Glu Gln Leu Asn Thr Arg Gln
210 215 220

Lys Arg Ile Glu Leu Thr Ser Ser Arg Gln Ala Tyr Leu Ser Met Leu
 225 230 235 240
 Ala Leu Leu Thr Gly Glu Glu Met Pro Ala Gly Ile Ser Leu Gln Lys
 245 250 255
 Pro Val Pro Glu Trp Asp Ile Pro Val Ile Ala Asn Asn Arg Pro Glu
 260 265 270
 Leu Ile Trp Phe Asp Ala Gln Asn Gly Arg Leu Gln Val Gln Glu Glu
 275 280 285
 Ala Leu Lys Thr Gln Leu Met Pro Arg Phe Gly Leu Phe Val Gln Gly
 290 295 300
 Ala Tyr Gly Asn Pro Gly Leu Asn Met Leu Lys Asn Glu Phe Ser Pro
 305 310 315 320
 Tyr Tyr Val Ala Gly Val Arg Leu Ser Trp Asn Phe Gly Ser Leu Tyr
 325 330 335
 Thr Leu Arg Asn Asp Arg Arg Val Ile Ala Ala Asn Arg Gln Leu Leu
 340 345 350
 Asp Ser Asn Arg Asp Val Phe Leu Phe Asn Thr Arg Leu Gln Ala Thr
 355 360 365
 Gln Gln Gly Ser Ala Val Glu Ser Val Arg Arg Gln Met Ala Asp Asp
 370 375 380
 Asp Glu Ile Ile Arg Leu Arg Thr Ser Ile Arg Lys Ala Ser Glu Ala
 385 390 395 400
 Lys Val Ala Asn Gly Thr Met Thr Val Thr Asp Met Leu Arg Asp Met
 405 410 415
 Thr Ser Glu Asn Leu Ala Arg Gln Thr Lys Ala Leu His Glu Val Gln
 420 425 430
 Leu Leu Met Asn Met Tyr Gln Leu Lys Tyr Thr Thr Asn Asn
 435 440 445

<210> 7274

<211> 431

<212> PRT

<213> B.fragilis

<400> 7274

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190

Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
 290 295 300
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
 305 310 315 320
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
 325 330 335
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
 340 345 350
 Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
 355 360 365
 Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
 370 375 380
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
 385 390 395 400
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
 405 410 415
 Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
 420 425 430

<210> 7275

<211> 384

<212> PRT

<213> B.fragilis

<400> 7275

Thr Lys His Leu Leu Thr Thr Ser Ser Arg Cys Thr Asn Phe Lys Arg
 1 5 10 15
 Lys Val Asn Leu Asn Lys Glu Lys Ile Arg Met Lys Asn Val Thr Leu
 20 25 30
 Ile Leu Asp Asp Gly Ser Arg Phe His Gly Lys Ser Phe Gly Tyr Glu
 35 40 45
 Lys Pro Val Ala Gly Glu Val Val Phe Asn Thr Ala Met Thr Gly Tyr
 50 55 60
 Pro Glu Ser Leu Thr Asp Pro Ser Tyr Ala Gly Gln Leu Met Thr Leu
 65 70 75 80
 Thr Tyr Pro Leu Val Gly Asn Tyr Gly Val Pro Pro Phe Ser Ile Glu
 85 90 95
 Pro Asn Gly Leu Ala Thr Phe Met Glu Ser Glu Arg Ile His Ala Glu
 100 105 110
 Ala Ile Ile Val Ser Asp Tyr Ser Gln Glu Tyr Ser His Trp Asn Ala
 115 120 125
 Val Glu Ser Leu Ala Asp Trp Leu Lys Arg Glu Gln Val Pro Gly Ile
 130 135 140
 Thr Gly Ile Asp Thr Arg Glu Leu Thr Lys Val Leu Arg Glu His Gly
 145 150 155 160
 Val Met Met Gly Arg Ile Val Phe Asp Asp Glu Pro Glu Ser Ala Pro
 165 170 175

Glu Ala Val Tyr Ser Gly Val Asn Tyr Val Asp Lys Val Ser Cys Lys
 180 185 190
 Glu Val Ile Arg Tyr Asn Glu Gly Ala Asp Lys Lys Lys Val Val Leu
 195 200 205
 Val Asp Cys Gly Val Lys Thr Asn Ile Ile Arg Cys Leu Leu Arg Arg
 210 215 220
 Asp Val Glu Val Ile Arg Val Pro Trp Asn Tyr Asp Phe Asn His Leu
 225 230 235 240
 Lys Phe Asp Gly Leu Phe Ile Ser Asn Gly Pro Gly Asp Pro Asp Thr
 245 250 255
 Cys Asp Ala Ala Val Gln Asn Ile Arg Lys Ala Met Gln Asn Pro Lys
 260 265 270
 Leu Pro Ile Phe Gly Ile Cys Met Gly Asn Gln Leu Leu Ser Lys Ala
 275 280 285
 Gly Gly Ala Lys Ile Tyr Lys Leu Lys Tyr Gly His Arg Ser His Asn
 290 295 300
 Gln Pro Val Arg Met Val Gly Thr Glu Arg Cys Phe Ile Thr Ser Gln
 305 310 315 320
 Asn His Gly Tyr Ala Val Asp Asn Asn Thr Leu Gly Thr Asp Trp Glu
 325 330 335
 Pro Leu Phe Ile Asn Met Asn Asp Gly Ser Asn Glu Gly Ile Arg His
 340 345 350
 Lys Thr Asn Pro Trp Phe Ser Ala Gln Phe His Pro Glu Ala Ala Ser
 355 360 365
 Gly Pro Thr Asp Thr Glu Phe Leu Phe Asp Glu Phe Val Lys Leu Leu
 370 375 380

<210> 7276

<211> 231

<212> PRT

<213> B.fragilis

<400> 7276

Ser Leu Val Tyr Arg Met Phe Thr Arg Lys Tyr Leu Leu Cys Glu Thr
 1 5 10 15
 Leu Cys His Ser Val Val Asn Pro Pro Asn Asn Phe Lys Thr Met Asn
 20 25 30
 Asn Glu Ile Asn Thr Leu Asn Arg Gln Lys Gly Ala Ile Leu Leu Leu
 35 40 45
 Asp Asn Tyr Asp Ser Phe Thr Tyr Asn Leu Leu His Val Val Lys Glu
 50 55 60
 Gln Gly Val Thr Asp Ile Glu Val Phe Arg Asn Asp Glu Ile Thr Leu
 65 70 75 80
 Asp Glu Val Glu Arg Phe Asp Lys Ile Ile Leu Ser Pro Gly Pro Gly
 85 90 95
 Ile Pro Glu Glu Ala Gly Leu Leu Leu Pro Ile Ile Arg Lys Tyr Ala
 100 105 110
 Ala Thr Lys Ser Ile Leu Gly Val Cys Leu Gly His Gln Ala Ile Gly
 115 120 125
 Glu Ala Phe Gly Ala Thr Leu Glu Asn Leu Thr Glu Val Tyr His Gly
 130 135 140
 Val Gln Thr Pro Val Ser Ile Leu Lys Glu Asp Ile Leu Phe Arg Gly
 145 150 155 160
 Leu Gly Arg Glu Ile Pro Val Gly Arg Tyr His Ser Trp Val Val Ser
 165 170 175
 Arg Lys Asp Phe Pro Gly Cys Leu Glu Ile Thr Ala Glu Ser Arg Glu
 180 185 190
 Gly Gln Ile Met Ala Leu Arg His Arg Thr Tyr Asp Val His Gly Ile
 195 200 205

Gln Phe His Pro Glu Ser Val Leu Thr Pro Gln Gly Lys Glu Ile Ile
 210 215 220
 Lys Asn Phe Leu Asn Asn Arg
 225 230

<210> 7277
 <211> 97
 <212> PRT
 <213> B.fragilis

<400> 7277
 Cys Trp Phe Leu Phe Leu Asn Lys Leu Tyr Leu Arg Asn Asn Ile Asn
 1 5 10 15
 Asn Lys Met Phe Lys Lys Ser Phe Leu Phe Lys Arg Ser Ile Ile Leu
 20 25 30
 Pro Tyr Ile Ser Cys Thr Tyr Asn Val His Leu Leu Gly Pro Lys Val
 35 40 45
 Gln Gly Pro Phe Tyr Ala Pro Ile Glu Ser Glu Lys Lys Asp Lys Lys
 50 55 60
 Thr Ala Ile Thr Ser Asn Asn Gln Ile Val Thr Asn Asn Asn Gln Gln
 65 70 75 80
 Lys Gln Trp Thr Lys Lys Ser Arg Lys Val Asn Ser Lys Lys Asn Thr
 85 90 95
 Ile

<210> 7278
 <211> 498
 <212> PRT
 <213> B.fragilis

<400> 7278
 Val Ser Ile Tyr Pro Leu Lys Gly Phe Phe Phe Gly Pro Pro Lys Lys
 1 5 10 15
 Tyr Val Trp Gly His Ala Tyr Asn Asn Ser Lys Pro Ser Leu Pro Ile
 20 25 30
 Phe Gln Ile Asn Tyr Leu His Leu Arg Ser Cys Lys Lys Thr Trp His
 35 40 45
 Leu Gln Thr Glu Arg Thr Gln His Lys Lys Thr Ser Thr Met Lys Lys
 50 55 60
 Ile Leu Phe Leu Leu Thr Ile Leu Val Ser Val Pro Ala Phe Ser Gln
 65 70 75 80
 Ser Ala Asp Glu Arg Ile Gly Ala Phe Leu Asn Gln Ala Asp Trp Phe
 85 90 95
 Gly Leu Glu Lys Asn Tyr Pro Ile Leu Lys Asp Ser Met Gln Ala Asp
 100 105 110
 Phe Leu Lys Leu Met Ser Glu Ala Leu Ile Gly Tyr Tyr Phe Asn Arg
 115 120 125
 Pro Asp Glu Ala Leu Gln Ser Ile His Lys Leu Leu Val Asn His Gln
 130 135 140
 Ala Glu Ile Gly Gly Gln Asn Ala Leu Asn Met Ala Ile Leu Ala Cys
 145 150 155 160
 Gln Ile Asp Gly Leu Lys Gly Asn Tyr Ala Thr Ala Ala Gln Asn Ser
 165 170 175
 Arg Ser Ile Met Glu Gln Leu Lys Gln Gln Asn Ala Glu Gln Gly Met
 180 185 190
 Tyr Lys Ser Leu Glu Gly Ile Cys Tyr Phe Tyr Asp Gln Leu Lys Asn
 195 200 205
 Ile Pro Ala Leu Gly Ile Thr Cys Pro Gln Glu Asp Ile Ile Ile Pro

210	215	220
Val Asp Ile Glu Lys	Val Lys Leu Pro Thr Ser	Ile Glu Pro Lys Gly
225	230	235
Trp Arg Gly Thr Thr	Ile Leu Ile Pro Val Thr	Ile Asn Gly Lys Thr
245	250	255
Tyr Gln Phe Ile Phe	Asp Thr Gly Ala Gly Thr Ser	Tyr Met Ser Gln
260	265	270
Arg Met Ala Lys Glu Thr Gly	Val Arg Ile Leu Ser Asp	Ser Leu Val
275	280	285
Ile Asn Ser Asn Leu Pro Gly	Ala Met Thr Gly Asn Phe	Gly Thr Leu
290	295	300
Glu Asn Met Gln Ile Gly Ser	Ile Thr Phe His Asn Ser	Leu Ile Thr
305	310	315
Ile Ala Pro Pro Asn Ala Phe	Asp Ser Ile Met Ile Val	Asp Ala Val
325	330	335
Leu Gly Met Asp Phe Ile Gly	Leu Phe Asp Glu Val Arg	Ile Tyr Pro
340	345	350
Lys Asp Lys Lys Ile Val Phe	Pro Lys Ser Ser Thr Pro	Leu Pro Ser
355	360	365
Tyr Gly Arg Asn Leu Met Lys	Val Asp Arg Ala Leu Lys	Leu Lys Ala
370	375	380
Gln Ala Asn Gly Glu Thr Leu	Met Leu His Phe Asp Thr	Gly Asn Ser
385	390	395
Thr Ala Gly Leu Phe Tyr Gln	Tyr Tyr Glu Lys His Lys	Thr Glu Phe
405	410	415
Glu Ser Ile Gly Lys Lys Glu	Lys Ile Thr Gly Gly Gly	Phe Asn His
420	425	430
Val Val Thr Lys Asp Ile Leu	Arg Leu Pro Ser Phe Asp	Met Glu Ile
435	440	445
Gly Asp Ala Thr Ala His Leu	Lys Asn Leu Ala Val Asp	Ile Thr Pro
450	455	460
Asn Gly Ile Pro Ala Glu Asp	Asp Gly Asn Ile Gly Met	Asp Met Ile
465	470	475
Asn Gln Phe Asp Cys Val Thr	Ile Asn Leu Lys Asp Met	Phe Leu Lys
485	490	495
Leu Glu		

<210> 7279

<211> 362

<212> PRT

<213> B.fragilis

<400> 7279

Asn Cys Tyr Leu Cys Arg Glu Asn Ser Lys Asn Asp Thr Asp Met Lys	
1	5
Ala Asp Tyr Pro Ser Val Leu Leu Ile Tyr Thr Gly Gly Thr Ile Gly	
20	25
Met Ile Glu Asn Pro Glu Thr Gly Ala Leu Glu Asn Phe Asn Phe Asp	
35	40
His Leu Leu Lys His Val Pro Glu Leu Lys Arg Phe Asn Tyr Arg Ile	
50	55
Ser Ser Tyr Gln Phe Asp Pro Pro Ile Asp Ser Ser Asp Met Glu Pro	
65	70
Ala Phe Trp Ala Lys Leu Val Glu Ile Ile Asn Tyr Asn Tyr Asp Ser	
85	90
Phe Asp Gly Phe Val Ile Leu His Gly Thr Asp Thr Met Ala Tyr Thr	
100	105
Ala Ser Ala Leu Ser Phe Met Leu Glu Asn Leu Ser Lys Pro Val Ile	

115 120 125
 Leu Thr Gly Ser Gln Leu Pro Ile Gly Thr Leu Arg Thr Asp Gly Lys
 130 135 140
 Glu Asn Leu Ile Thr Ala Ile Glu Ile Ala Ala Ala Lys Asn Pro Asp
 145 150 155 160
 Gly Thr Ala Ile Val Pro Glu Val Cys Ile Phe Phe Glu Asn His Leu
 165 170 175
 Met Arg Gly Asn Arg Thr Thr Lys Ile Asn Ala Glu Asn Phe Asn Ala
 180 185 190
 Phe Arg Ser Phe Asn Tyr Pro Pro Leu Ala Arg Val Gly Ile His Ile
 195 200 205
 Lys Tyr Glu Pro Asn Leu Ile Arg Lys Pro Asp Leu Ser Lys Pro Leu
 210 215 220
 Lys Pro His Tyr Leu Phe Asp Thr Asn Val Val Ile Leu Thr Leu Phe
 225 230 235 240
 Pro Gly Ile Gln Glu Gly Ile Val Ser Ala Leu Leu His Val Pro Gly
 245 250 255
 Leu Lys Ala Val Val Leu Lys Thr Phe Gly Ser Gly Asn Ala Pro Gln
 260 265 270
 Lys Glu Trp Phe Ile Arg Glu Leu Lys Asp Ala Thr Asp Arg Gly Ile
 275 280 285
 Ile Ile Val Asn Ile Thr Gln Cys Ala Ser Gly Ala Val Glu Met Glu
 290 295 300
 Arg Tyr Gly Thr Gly Ile Gln Leu Leu Gln Ala Gly Val Ile Ser Gly
 305 310 315 320
 Tyr Asp Ser Thr Pro Glu Cys Ala Val Thr Lys Leu Met Phe Leu Leu
 325 330 335
 Gly His Gly Leu Asp Asn Lys Glu Ile Arg Tyr Lys Met Asn Ser Cys
 340 345 350
 Leu Ile Gly Glu Ile Thr Lys Arg Val Glu
 355 360

<210> 7280

<211> 386

<212> PRT

<213> B.fragilis

<400> 7280

Met Leu His Leu Ile Tyr Ile Gly Arg His Ala Asp Thr Ile Glu Gln
 1 5 10 15
 Phe Ser Lys Ile Ala Glu Gly Ala Phe Tyr Ala Ile Gln Asn Ser Arg
 20 25 30
 Lys Ala Ser Glu Phe Ile Asp Lys Ile Arg Glu Lys Tyr Asp Ile Val
 35 40 45
 Ile Leu Phe Glu Gln Arg Ile Ile Ser Lys Asp Ile Pro Glu Ile Gln
 50 55 60
 Tyr Leu Arg Lys Lys Phe Pro Gly Val Tyr Ile Ala Leu Val Thr Glu
 65 70 75 80
 Gly Ile Asn Lys Glu Asp Arg Pro Ala Tyr Leu Lys Ala Gly Ile Asn
 85 90 95
 Asn Ser Ile Pro Phe Asn Ser Thr Pro Glu Thr Phe Lys Asp Ile Thr
 100 105 110
 Glu Phe Met Met Arg Arg Lys Gln Gln Lys Ile Asn Asp Ile His Lys
 115 120 125
 Lys Gly Ala Asn Leu Leu Phe Lys Leu Pro Leu Trp Lys Arg Leu
 130 135 140
 Phe Asp Ile Val Phe Ser Ser Ile Ala Ile Leu Cys Leu Ser Pro Ile
 145 150 155 160
 Leu Ile Ile Thr Ala Val Ala Ile Arg Leu Glu Ser Lys Gly Ala Val

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      165      170      175
Val Tyr Lys Ser Lys Arg Val Gly Ser Asn Tyr Lys Ile Phe Asp Phe
      180      185      190
Leu Lys Phe Arg Ser Met Tyr Thr Asp Ala Asp Lys His Leu Arg Asp
      195      200      205
Phe Asn Gln Leu Asn Gln Tyr Gln Thr Glu Glu Glu Pro Glu Leu Ser
      210      215      220
Gly Glu Glu Phe Leu Ile Gly Asp Asp Ile Glu Leu Asn Glu Glu Glu
      225      230      235
Thr Met Leu Ile Ser Asp Asp Phe Ile Ile Ser Glu Gln Asn Tyr Thr
      245      250      255
Ser Lys Lys Ser Ile Glu Lys Lys Asn Ala Phe Val Lys Leu Glu Asn
      260      265      270
Asp Pro Arg Ile Thr Lys Val Gly Arg Ile Ile Arg Lys Tyr Ser Ile
      275      280      285
Asp Glu Leu Pro Gln Leu Val Asn Ile Leu Lys Gly Asp Met Ser Ile
      290      295      300
Val Gly Asn Arg Pro Leu Pro Leu Tyr Glu Ala Glu Leu Leu Thr Ser
      305      310      315
Asp Glu Tyr Ile Asp Arg Phe Met Gly Pro Ala Gly Leu Thr Gly Leu
      325      330      335
Trp Gln Val Glu Lys Arg Gly Ser Ser Gly Lys Leu Ser Ala Asp Glu
      340      345      350
Arg Lys Gln Leu Asp Ile Lys Tyr Ala Gln Thr Phe Ser Phe Leu Leu
      355      360      365
Asp Met Glu Ile Ile Leu Arg Thr Phe Thr Ala Phe Ile Gln Lys Glu
      370      375      380
Asn Val
385

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<210> 7281
<211> 140
<212> PRT
<213> B.fragilis

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<400> 7281
Arg Cys Tyr His Tyr Ile Pro Ile Asn Arg Asp Cys Ser Ile Met Glu
1      5      10      15
Asn Phe Tyr Leu Cys Pro Lys Leu Asn Gly Met Asn Gln Gly Ser Leu
      20      25      30
Lys Ile Met Arg Gly Phe Arg Pro Val Leu Phe Asn Trp Asp Met Pro
      35      40      45
Gly Ile Thr Leu Phe Thr His Ser His Val Val Asn Gly Val Thr Met
      50      55      60
Val His Ser His Pro Phe Lys Lys Ala Ser Pro His Ser His Thr Pro
      65      70      75      80
Val Glu Phe Gln Leu Ile His Leu Leu Asn His Val Val Thr Thr Glu
      85      90      95
Ala Gly Ile Phe Phe Leu Ser Leu Gln Phe Ile Ala Cys Leu Leu Tyr
      100      105      110
Thr Leu Ser Trp Arg Pro Asp Arg Ala Gly Tyr Cys Ser Ser Val Val
      115      120      125
Gly Val Val Ser Leu Arg Ala Pro Pro Ala Gly Arg
      130      135      140

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<210> 7282
<211> 300
<212> PRT
<213> B.fragilis

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<400> 7282

Leu His Leu His Lys Leu Lys Ile Lys Met Lys Lys Leu Phe Ala Leu
 1 5 10 15
 Leu Phe Ile Ser Met Ile Ser Gly Met Ile Met Ala Gln Ile Pro Glu
 20 25 30
 Val Ser Gly Thr Ile Val Phe Lys Lys Asp Gly Gln Pro Val Val Gly
 35 40 45
 Ala Leu Val Ser Val Leu Gly Thr Asp Ile Ser Thr Ile Thr Asp Val
 50 55 60
 Asp Gly Arg Phe Thr Leu Lys Glu Ile Pro Glu Lys Ala Gln Arg Ile
 65 70 75 80
 Arg Val Lys Tyr Ile Gly Met Gln Pro Lys Asp Val Lys Ile Arg Pro
 85 90 95
 Ile Met Asn Val Thr Leu Asp Leu Glu Lys Lys Leu Ala Phe Phe Ile
 100 105 110
 Gln Ala Gly Val Gly Val Ser Gly Tyr Asn Leu Glu Asn Asn Asn Glu
 115 120 125
 Asp Ile Tyr Gly Gly Asn Asn His Leu Tyr Ile Gln Gly Gly Val Gly
 130 135 140
 Leu Asn Tyr Asn Phe Ser Thr Tyr Phe Ser Leu Gln Pro Ser Val Asn
 145 150 155 160
 Val Val Ala Lys Gly Cys Lys Asn Met Gly Arg Arg Gly Ser Asp Gly
 165 170 175
 Gln Gly Glu Ile Thr Val Asp Pro Val Tyr Leu Glu Ile Pro Val Leu
 180 185 190
 Ile Ala Ala Arg Phe Ile Ile Ser Asp Phe Gly Arg Leu Ile Phe Asn
 195 200 205
 Ala Gly Pro Tyr Ala Ala Ile Gly Ile Ala Gly Lys Gly Lys Tyr Thr
 210 215 220
 Asp Glu Trp Glu Gly Thr Ser Met Lys Phe Asp Leu Phe Ser Gly Asp
 225 230 235 240
 Glu Ala Val Leu Lys Arg Phe Asp Ala Gly Val Gln Ala Gly Phe Ala
 245 250 255
 Tyr Glu Ile Lys His Ile Gly Phe Ser Tyr Thr Phe Gly Tyr Gly Leu
 260 265 270
 Leu Lys Pro Phe Lys Glu Trp Asn Lys Glu Trp Gly Ala Thr Pro His
 275 280 285
 Asn Ile Ser His Asn Phe Gly Leu Lys Tyr Ile Phe
 290 295 300

<210> 7283

<211> 401

<212> PRT

<213> B.fragilis

<400> 7283

Pro Gln Ile Gln Ile Thr Asn Lys Tyr Arg Ile Met Lys Ser Phe Leu
 1 5 10 15
 Val Asp Gln Asp Gly Tyr Tyr Gly Glu Phe Gly Gly Ala Tyr Val Pro
 20 25 30
 Glu Ile Leu His Lys Cys Val Glu Glu Leu Gln Asn Thr Tyr Leu Asp
 35 40 45
 Val Ile Glu Ser Glu Asp Phe Lys Lys Glu Phe Asp Gln Leu Leu Arg
 50 55 60
 Asp Tyr Val Gly Arg Pro Ser Pro Leu Tyr Pro Ala Arg Arg Leu Ser
 65 70 75 80
 Glu Lys Tyr Gly Cys Lys Met Tyr Leu Lys Arg Glu Asp Leu Asn His
 85 90 95

Thr Gly Ala His Lys Ile Asn Asn Thr Ile Gly Gln Ile Leu Leu Ala
 100 105 110
 Arg Arg Met Gly Lys Lys Arg Ile Ile Ala Glu Thr Gly Ala Gly Gln
 115 120 125
 His Gly Val Ala Thr Ala Thr Val Cys Ala Leu Met Asn Met Glu Cys
 130 135 140
 Ile Val Tyr Met Gly Lys Thr Asp Val Glu Arg Gln His Ile Asn Val
 145 150 155 160
 Glu Lys Met Lys Met Leu Gly Ala Thr Val Val Pro Val Thr Ser Gly
 165 170 175
 Asn Met Thr Leu Lys Asp Ala Thr Asn Glu Ala Ile Arg Asp Trp Cys
 180 185 190
 Cys His Pro Ser Asp Thr Tyr Tyr Ile Ile Gly Ser Thr Val Gly Pro
 195 200 205
 His Pro Tyr Pro Asp Met Val Ala Arg Leu Gln Ser Val Ile Ser Glu
 210 215 220
 Glu Ile Lys Lys Gln Leu Gln Glu Lys Glu Gly Arg Asp Tyr Pro Asp
 225 230 235 240
 Tyr Leu Ile Ala Cys Val Gly Gly Gly Ser Asn Ala Ala Gly Thr Ile
 245 250 255
 Tyr His Tyr Ile Asp Asp Glu Arg Val Arg Ile Val Leu Ala Glu Ala
 260 265 270
 Gly Gly Lys Gly Ile Glu Thr Gly Met Thr Ala Ala Thr Ile Gln Leu
 275 280 285
 Gly Lys Met Gly Ile Ile His Gly Ala Arg Thr Phe Val Ile Gln Asn
 290 295 300
 Glu Asp Gly Gln Ile Glu Glu Pro Tyr Ser Ile Ser Ala Gly Leu Asp
 305 310 315 320
 Tyr Pro Gly Ile Gly Pro Met His Ala Asn Leu Ala Asp Lys Lys Arg
 325 330 335
 Ala Met Val Leu Ala Val Asn Asp Asp Glu Ala Ile Arg Ala Ala Tyr
 340 345 350
 Glu Leu Thr Arg Leu Glu Gly Ile Ile Pro Ala Leu Glu Ser Ala His
 355 360 365
 Ala Leu Gly Ala Leu Glu Lys Ile Thr Phe Lys Pro Glu Asp Val Val
 370 375 380
 Val Leu Thr Val Ser Gly Arg Gly Asp Lys Asp Ile Glu Thr Tyr Leu
 385 390 395 400
 Gly

<210> 7284

<211> 90

<212> PRT

<213> B.fragilis

<400> 7284

Ile Ser Lys Gln Ser Arg Thr Lys Phe Arg Gln Ile Leu Lys His Pro
 1 5 10 15
 Glu Ile Lys Met Ile Lys Ala Phe Leu Lys Lys Asn Arg Leu Thr Phe
 20 25 30
 Ile Gly Leu Val Ile Gly Ala Val Gly Gly Phe Leu Tyr Trp Lys Tyr
 35 40 45
 Val Gly Cys Thr Ser Gly Thr Cys Pro Ile Thr Ser Ser Pro Val Asn
 50 55 60
 Ser Thr Leu Trp Gly Ala Val Met Gly Gly Leu Leu Asn Leu Phe
 65 70 75 80
 Lys Thr Asp Ser Thr Pro Lys Lys Thr Asn
 85 90

<210> 7285
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 7285
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 7286
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 7286
 Lys Pro Tyr Lys Ser Leu Phe Lys Glu Asn Leu Asn Arg Phe Leu Ile
 1 5 10 15
 Asn Cys Phe Leu Ile Lys Gln Ile Ser Asn Gly Lys Tyr Tyr Gly Asp
 20 25 30
 Asn Ile Leu Tyr Gly Met Lys Lys Glu Gly Gly Ser Arg Cys Val Val
 35 40 45
 Ser Gly Arg Glu Val Val Arg Leu Gly Gly Glu Leu Ile Ser Pro Gln
 50 55 60
 Ile Glu Thr Glu Ser Tyr Gly Val Phe Cys Tyr Phe Leu Leu Cys Gly
 65 70 75 80
 Thr Leu Cys Tyr Pro Val Met Val Arg Leu Ser Asn Ser Ser Ser Pro
 85 90 95
 Tyr Ala Ile Asn Val Leu Ala Arg
 100

<210> 7287
 <211> 382
 <212> PRT
 <213> B.fragilis

<400> 7287
 Pro Met Asp Asn Phe Ile Phe Gln Asn Pro Val Lys Leu Ile Met Gly
 1 5 10 15
 Arg Gly Met Ile Ser Arg Leu Ser Glu Glu Ile Pro Ala Asp Lys Arg
 20 25 30
 Val Met Ile Thr Phe Gly Gly Gly Ser Val Lys Lys Asn Gly Val Tyr
 35 40 45
 Asp Gln Val Lys Glu Ala Leu Lys Asn His Phe Thr Val Glu Phe Trp
 50 55 60
 Gly Ile Glu Pro Asn Pro Ser Ile Glu Thr Leu Arg Lys Ala Ile Ala
 65 70 75 80
 Leu Gly Lys Glu Glu Lys Val Asp Tyr Leu Leu Ala Val Gly Gly Gly
 85 90 95

Ser Val Ile Asp Gly Thr Lys Leu Ile Ser Ala Gly Leu Leu Tyr Asp
 100 105 110
 Gly Asp Ala Trp Asp Leu Val Leu Ala Gly Arg Pro Val Thr His Thr
 115 120 125
 Val Pro Leu Ala Thr Val Leu Thr Leu Pro Ala Thr Gly Ser Glu Met
 130 135 140
 Asn Ser Gly Ala Val Ile Ser Arg His Glu Thr Lys Glu Lys Tyr Pro
 145 150 155 160
 Phe Tyr Ser Asn Tyr Pro Leu Phe Ser Ile Leu Asp Pro Glu Val Thr
 165 170 175
 Phe Thr Leu Pro Pro His Gln Val Ala Cys Gly Ile Ala Asp Thr Phe
 180 185 190
 Val His Val Met Glu Gln Tyr Met Thr Thr Pro Gly Gln Ser Arg Val
 195 200 205
 Met Asp Arg Trp Ala Glu Gly Ile Leu Gln Thr Leu Met Glu Ile Ala
 210 215 220
 Pro Lys Ile Arg Glu Asn Gln His Asp Tyr Gln Leu Met Ser Asp Phe
 225 230 235 240
 Met Leu Ser Ala Thr Met Ala Leu Asn Gly Phe Ile Ala Met Gly Val
 245 250 255
 Ser Gln Asp Trp Ala Thr His Met Ile Gly His Glu Leu Thr Ala Leu
 260 265 270
 His Gly Leu Thr His Gly His Thr Leu Val Ile Val Phe Pro Gly Thr
 275 280 285
 Leu Arg Val Leu Arg Lys Ala Lys Gly Asp Lys Ile Leu Gln Tyr Gly
 290 295 300
 Glu Arg Val Leu Gly Ile Thr Ser Gly Ser Arg Asp Glu Arg Ile Asp
 305 310 315 320
 Glu Ala Ile Arg Arg Thr Glu Glu Phe Phe Arg Ser Leu Gly Leu Thr
 325 330 335
 Thr Arg Leu Ser Glu Glu Gly Ile Gly Met Glu Thr Ile Asp Glu Ile
 340 345 350
 Glu Arg Arg Phe Asn Glu Arg Gly Val Arg Tyr Gly Glu Asn Glu Asp
 355 360 365
 Val Thr Gly Ala Val Ala Lys Glu Ile Leu Lys Ser Ser Leu
 370 375 380

<210> 7288

<211> 1084

<212> PRT

<213> B.fragilis

<400> 7288

Thr Lys Leu Lys Asn Ile Ile Ile Met Lys Glu Asn Asn Ile Lys Lys
 1 5 10 15
 Val Leu Leu Leu Gly Ser Gly Ala Leu Lys Ile Gly Glu Ala Gly Glu
 20 25 30
 Phe Asp Tyr Ser Gly Ser Gln Ala Leu Lys Ala Leu Lys Glu Glu Gly
 35 40 45
 Ile Glu Thr Ile Leu Ile Asn Pro Asn Ile Ala Thr Val Gln Thr Ser
 50 55 60
 Glu Gly Val Ala Asp Gln Ile Tyr Phe Leu Pro Val Thr Pro Tyr Phe
 65 70 75 80
 Val Glu Lys Val Ile Arg Lys Glu Arg Pro Glu Gly Ile Met Leu Ala
 85 90 95
 Phe Gly Gly Gln Thr Ala Leu Asn Cys Gly Val Ala Leu Tyr Arg Glu
 100 105 110
 Gly Ile Leu Glu Lys Tyr Asn Val Lys Val Leu Gly Thr Pro Val Gln
 115 120 125

Ala Ile Ile Asp Thr Glu Asp Arg Glu Leu Phe Val Asp Lys Leu Asn
 130 135 140
 Glu Ile Asp Val Lys Thr Ile Lys Ser Glu Ala Val Glu Asn Ala Glu
 145 150 155 160
 Asp Ala Arg Arg Ala Ala Arg Glu Leu Gly Tyr Pro Val Ile Val Arg
 165 170 175
 Ala Ala Tyr Ala Leu Gly Gly Leu Gly Ser Gly Phe Cys Asp Asn Glu
 180 185 190
 Glu Glu Leu Asp Leu Leu Val Glu Lys Ala Phe Ser Phe Ser Pro Gln
 195 200 205
 Val Leu Val Glu Lys Ser Leu Arg Gly Trp Lys Glu Val Glu Tyr Glu
 210 215 220
 Val Val Arg Asp Arg Phe Asp Asn Cys Ile Thr Val Cys Asn Met Glu
 225 230 235 240
 Asn Phe Asp Pro Leu Gly Ile His Thr Gly Glu Ser Ile Val Ile Ala
 245 250 255
 Pro Ser Gln Thr Leu Thr Asn Lys Glu Tyr His Lys Leu Arg Glu Leu
 260 265 270
 Ala Ile Arg Ile Ile Arg His Ile Gly Ile Val Gly Glu Cys Asn Val
 275 280 285
 Gln Tyr Ala Phe Asp Pro Glu Ser Glu Asp Tyr Arg Val Ile Glu Val
 290 295 300
 Asn Ala Arg Leu Ser Arg Ser Ser Ala Leu Ala Ser Lys Ala Thr Gly
 305 310 315 320
 Tyr Pro Leu Ala Phe Val Ala Ala Lys Leu Gly Leu Gly Tyr Gly Leu
 325 330 335
 Phe Asp Leu Lys Asn Ser Val Thr Lys Thr Thr Ser Ala Phe Phe Glu
 340 345 350
 Pro Ala Leu Asp Tyr Val Val Cys Lys Ile Pro Arg Trp Asp Leu Gly
 355 360 365
 Lys Phe His Gly Val Asp Lys Glu Leu Gly Ser Ser Met Lys Ser Val
 370 375 380
 Gly Glu Val Met Ala Ile Gly Arg Thr Phe Glu Glu Ala Ile Gln Lys
 385 390 395 400
 Gly Leu Arg Met Ile Gly Gln Gly Met His Gly Phe Val Glu Asn Lys
 405 410 415
 Glu Leu Val Ile Pro Asp Ile Asp Lys Ala Leu His Glu Pro Thr Asp
 420 425 430
 Lys Arg Ile Phe Val Ile Ser Lys Ala Phe Arg Ala Gly Tyr Thr Ile
 435 440 445
 Asp Gln Val His Glu Leu Thr Lys Ile Asp Lys Trp Phe Leu Gln Lys
 450 455 460
 Leu Met Asn Ile Met Asn Thr Ser Glu Glu Leu His Gln Trp Gly Asn
 465 470 475 480
 Asn His Lys Gln Ile Ala Asp Leu Pro Ala Asp Leu Leu Lys Gln Ala
 485 490 495
 Lys Arg Gln Gly Phe Ser Asp Phe Gln Ile Ala Arg Ala Ile Gly Tyr
 500 505 510
 Glu Gly Asp Met Glu Asp Gly Ser Leu Tyr Val Arg Asn Tyr Arg Lys
 515 520 525
 Ser Leu Gly Ile Val Pro Val Val Lys Gln Ile Asp Thr Leu Ala Ala
 530 535 540
 Glu Tyr Pro Ala Gln Thr Asn Tyr Leu Tyr Leu Thr Tyr Ser Gly Thr
 545 550 555 560
 Ala Asn Asp Val Thr Tyr Leu Gly Asp His Arg Ser Ile Val Val Leu
 565 570 575
 Gly Ser Gly Ala Tyr Arg Ile Gly Ser Ser Val Glu Phe Asp Trp Cys
 580 585 590
 Gly Val Gln Ala Leu Asn Thr Ile Arg Lys Glu Gly Trp Arg Ser Val

130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590

595	600	605
Met Ile Asn Tyr Asn Pro Glu Thr Val Ser Thr Asp Tyr Asp Met Cys		
610	615	620
Asp Arg Leu Tyr Phe Asp Glu Leu Thr Phe Glu Arg Val Met Asp Val		
625	630	635
Leu Glu Leu Glu Asn Pro Tyr Gly Val Ile Val Ser Thr Gly Gly Gln		
	645	650
Ile Pro Asn Asn Leu Ala Leu Arg Leu Asp Ala Gln Asn Ile His Ile		
	660	665
Leu Gly Thr Ser Ala Gln Ser Ile Asp Asn Ala Glu Asp Arg Asp Lys		
	675	680
Phe Ser Ala Met Leu Asp Arg Ile Gly Val Asp Gln Pro Glu Trp Arg		
	690	695
Ala Leu Thr Ser Leu Glu Asp Ile Asn Ser Phe Val Asp Lys Val Gly		
705	710	715
Phe Pro Val Leu Val Arg Pro Ser Tyr Val Leu Ser Gly Ala Ala Met		
	725	730
Asn Val Cys Ser Asn Gln Glu Glu Leu Glu Arg Phe Leu Gln Leu Ala		
	740	745
Ala Asn Val Ser Lys Lys His Pro Val Val Val Ser Gln Phe Ile Glu		
	755	760
His Ala Lys Glu Val Glu Met Asp Ala Val Ala Gln Asn Gly Glu Ile		
	770	775
Ile Ala Tyr Ala Ile Ser Glu His Ile Glu Phe Ala Gly Val His Ser		
785	790	795
Gly Asp Ala Thr Ile Gln Phe Pro Pro Gln Lys Leu Tyr Val Glu Thr		
	805	810
Val Arg Arg Ile Lys Arg Ile Ser Arg Glu Ile Ala Lys Ala Leu Asn		
	820	825
Ile Ser Gly Pro Phe Asn Ile Gln Tyr Leu Ala Lys Asp Asn Asp Ile		
	835	840
Lys Val Ile Glu Cys Asn Leu Arg Ala Ser Arg Ser Phe Pro Phe Val		
	850	855
Ser Lys Val Leu Lys Ile Asn Phe Ile Glu Leu Ala Thr Lys Val Met		
865	870	875
Leu Gly Leu Pro Val Glu Lys Pro Glu Lys Asn Leu Phe Glu Leu Asp		
	885	890
Tyr Val Gly Ile Lys Ala Ser Gln Phe Ser Phe Asn Arg Leu Gln Lys		
	900	905
Ala Asp Pro Val Leu Gly Val Asp Met Ala Ser Thr Gly Glu Val Gly		
	915	920
Cys Ile Gly Ser Asp Thr Ser Cys Ala Val Leu Lys Ala Met Leu Ser		
	930	935
Val Gly Tyr Arg Ile Pro Lys Lys Lys Ile Leu Leu Ser Thr Gly Thr		
945	950	955
Pro Lys Gln Lys Val Asp Met Leu Glu Ala Ala Arg Met Leu Gln Lys		
	965	970
Lys Gly Tyr Asp Ile Phe Ala Thr Gly Gly Ser Ser Lys Phe Leu Thr		
	980	985
Glu Asn Gly Val Glu Asn Thr Arg Val Tyr Trp Pro Ser Glu Glu Gly		
	995	1000
His Pro Gln Ala Leu Glu Met Leu His Lys Lys Glu Ile Asp Met Val		
	1010	1015
Val Asn Ile Pro Lys Asn Leu Thr Ala Gly Glu Leu Asp Asn Gly Tyr		
1025	1030	1035
Lys Ile Arg Arg Ala Ala Ile Asp Leu Asn Ile Pro Leu Ile Thr Asn		
	1045	1050
Ala Arg Leu Ala Ser Ala Phe Ile Asn Ala Phe Cys Thr Met Asp Ile		
	1060	1065
		1070

Asp Asp Ile Ala Ile Lys Ser Trp Glu Glu Tyr Lys
1075 1080

<210> 7289
<211> 395
<212> PRT
<213> B.fragilis

<400> 7289

Asn	Ile	Asn	Asn	Met	Thr	Asn	Glu	Leu	Glu	Leu	Lys	Tyr	Gly	Cys	Asn
1				5					10					15	
Pro	Asn	Gln	Lys	Pro	Ala	Arg	Ile	Phe	Ile	Lys	Glu	Gly	Glu	Leu	Pro
		20					25						30		
Ile	Glu	Val	Leu	Asn	Gly	Arg	Pro	Gly	Tyr	Ile	Asn	Leu	Leu	Asp	Ala
	35				40						45				
Leu	Asn	Ser	Trp	Gln	Leu	Val	Lys	Glu	Leu	Lys	Glu	Ala	Thr	Gly	Leu
	50				55					60					
Pro	Ala	Ala	Ala	Ser	Phe	Lys	His	Val	Ser	Pro	Ala	Gly	Ala	Ala	Val
65				70					75					80	
Ala	Val	Glu	Met	Asn	Asp	Thr	Leu	Lys	Lys	Ile	Tyr	Phe	Val	Asp	Asp
			85						90				95		
Met	Glu	Leu	Ser	Pro	Met	Ala	Thr	Ala	Tyr	Ala	Arg	Ala	Arg	Gly	Ala
		100					105						110		
Asp	Arg	Met	Ser	Ser	Tyr	Gly	Asp	Phe	Ile	Ala	Leu	Ser	Asp	Ile	Cys
	115					120						125			
Asp	Glu	Pro	Thr	Ala	Arg	Ile	Ile	Asn	Arg	Glu	Val	Ser	Asp	Gly	Val
	130				135						140				
Ile	Ala	Pro	Gly	Tyr	Thr	Pro	Glu	Ala	Leu	Glu	Ile	Leu	Arg	Asn	Lys
145				150					155					160	
Arg	Lys	Gly	Thr	Tyr	Asn	Val	Ile	Lys	Ile	Asp	Pro	Ala	Tyr	Arg	Pro
			165					170					175		
Ala	Pro	Ile	Glu	His	Lys	Asp	Val	Phe	Gly	Ile	Thr	Phe	Glu	Gln	Gly
		180					185					190			
Arg	Asn	Glu	Leu	Lys	Ile	Asp	Glu	Ser	Leu	Leu	Lys	Glu	Met	Pro	Thr
	195					200						205			
Arg	Asn	Arg	Ile	Ile	Pro	Ala	Asp	Ala	Gln	Arg	Asp	Leu	Ile	Ile	Ala
210				215							220				
Leu	Ile	Thr	Leu	Lys	Tyr	Thr	Gln	Ser	Asn	Ser	Val	Cys	Tyr	Ala	Lys
225				230						235				240	
Asp	Gly	Gln	Ala	Ile	Gly	Ile	Gly	Ala	Gly	Gln	Gln	Ser	Arg	Ile	His
			245					250					255		
Cys	Thr	Arg	Leu	Ala	Gly	Asn	Lys	Ala	Asp	Ile	Trp	Tyr	Leu	Arg	Gln
		260					265						270		
His	Pro	Lys	Val	Met	Asn	Leu	Pro	Trp	Lys	Glu	Lys	Ile	Arg	Arg	Ala
	275						280					285			
Asp	Arg	Asp	Asn	Thr	Ile	Asp	Val	Tyr	Ile	Ser	Asp	Asp	Tyr	Met	Asp
	290					295					300				
Val	Leu	Ala	Asp	Gly	Val	Trp	Glu	Gln	Phe	Phe	Thr	Arg	Lys	Pro	Glu
305				310					315					320	
Val	Leu	Thr	Arg	Glu	Glu	Lys	Arg	Ala	Trp	Leu	Asp	Thr	Gln	Ser	Gly
			325					330					335		
Val	Ala	Leu	Gly	Ser	Asp	Ala	Phe	Phe	Pro	Phe	Gly	Asp	Asn	Ile	Glu
		340					345					350			
Arg	Ala	His	Lys	Ser	Gly	Val	Ser	Tyr	Ile	Ala	Gln	Pro	Gly	Gly	Ser
	355					360						365			
Val	Arg	Asp	Asp	His	Val	Ile	Glu	Thr	Cys	Asp	Lys	Tyr	Asp	Ile	Ala
	370				375						380				
Met	Ala	Phe	Thr	Gly	Ile	Arg	Leu	Phe	His	His					
385				390					395						

<210> 7290
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 <212> PRT
 <213> B.fragilis

<400> 7290

Asn	Lys	Asn	Asn	Met	Ala	Leu	Val	Asn	Glu	His	Phe	Leu	Lys	Leu	Pro
1				5					10					15	
Gly	Ser	Tyr	Leu	Phe	Ser	Asp	Ile	Ala	Lys	Lys	Val	Asn	Thr	Phe	Lys
			20					25					30		
Ile	Thr	His	Pro	Lys	Arg	Asp	Ile	Ile	Arg	Leu	Gly	Ile	Gly	Asp	Val
		35					40					45			
Thr	Arg	Pro	Leu	Pro	Lys	Ala	Cys	Ile	Glu	Ala	Met	His	Lys	Ala	Val
	50					55					60				
Glu	Glu	Met	Thr	Ser	Ala	Glu	Thr	Phe	Arg	Gly	Tyr	Gly	Pro	Glu	Gln
65					70				75					80	
Gly	Tyr	Asp	Phe	Leu	Ile	Glu	Ala	Ile	Ile	Lys	Asn	Asp	Tyr	Ala	Pro
			85						90					95	
Arg	Gly	Ile	His	Leu	Ser	Pro	Thr	Glu	Val	Phe	Val	Asn	Asp	Gly	Ala
			100					105					110		
Lys	Ser	Asp	Thr	Gly	Asn	Ile	Gly	Asp	Ile	Leu	Arg	His	Asp	Asn	Ser
		115					120					125			
Val	Gly	Val	Thr	Asp	Pro	Ile	Tyr	Pro	Val	Tyr	Ile	Asp	Ser	Asn	Val
	130					135					140				
Met	Cys	Gly	Arg	Ala	Gly	Val	Leu	Asp	Thr	Glu	Ser	Gly	Lys	Trp	Ser
145					150					155				160	
Asn	Val	Thr	Tyr	Met	Pro	Cys	Thr	Ala	Glu	Asn	His	Phe	Ile	Pro	Ala
				165					170					175	
Ile	Pro	Glu	Lys	Arg	Ile	Asp	Ile	Val	Tyr	Leu	Cys	Tyr	Pro	Asn	Asn
			180					185					190		
Pro	Thr	Gly	Thr	Thr	Leu	Thr	Lys	Ala	Glu	Leu	Lys	Lys	Trp	Val	Asp
		195					200					205			
Tyr	Ala	Leu	Ala	Asn	Asp	Thr	Leu	Ile	Leu	Phe	Asp	Ala	Ala	Tyr	Glu
	210					215					220				
Ala	Tyr	Ile	Arg	Glu	Pro	Asp	Ile	Pro	His	Ser	Ile	Tyr	Glu	Ile	Lys
225					230					235				240	
Gly	Ala	Lys	Lys	Cys	Ala	Ile	Glu	Phe	Arg	Ser	Phe	Ser	Lys	Thr	Ala
				245					250					255	
Gly	Phe	Thr	Gly	Val	Arg	Cys	Gly	Tyr	Thr	Val	Val	Pro	Lys	Glu	Leu
			260					265					270		
Thr	Ala	Ala	Thr	Leu	Glu	Gly	Glu	Arg	Ile	Pro	Leu	Asn	Arg	Leu	Trp
		275					280					285			
Asn	Pro	Pro	Ala	Met	His	Gln	Ile	Gln	Arg	Tyr	Val	Val	His	Tyr	Ala
	290					295					300				
Thr	Cys	Gly	Arg	Ser	Asp	Leu	His	Ser							
305						310									

<210> 7291
 <211> 505
 <212> PRT
 <213> B.fragilis

<400> 7291

Ser	Ile	Arg	Lys	Ala	Glu	Asp	Ser	Leu	Phe	Tyr	Ser	Ser	Asp	Arg	Lys
1				5					10					15	
Gln	Val	Leu	Ala	Val	Asn	Gly	Glu	Ile	Tyr	Asn	His	Arg	Asp	Ile	Arg
		20					25					30			
Ala	Gln	Tyr	Ala	Gly	Arg	Tyr	Glu	Phe	Arg	Thr	Gly	Ser	Asp	Cys	Glu

35	40	45
Val Ile Leu Ala Leu Tyr Arg Asp Lys Gly Ile His Phe Leu Glu Glu		
50	55	60
Leu Asn Gly Ile Phe Ala Phe Ala Leu Tyr Asp Glu Glu Lys Asp Glu		
65	70	75
Tyr Leu Ile Ala Arg Asp Pro Ile Gly Val Ile Pro Leu Tyr Ile Gly		
85	90	95
Lys Asp Ala Glu Gly His Val Tyr Phe Gly Ser Glu Leu Lys Ala Leu		
100	105	110
Glu Gly Phe Cys Asp Glu Tyr Glu Pro Phe Leu Pro Gly His Tyr Tyr		
115	120	125
His Ser Lys Glu Arg Thr Met Lys Arg Trp Tyr Thr Arg Asp Trp Met		
130	135	140
Glu Tyr Lys Glu Glu Asn Asp Lys Gln Ala Asp Ser Arg Ser Pro Thr		
145	150	155
Arg Gln Ile Gln Asp Ala Leu Glu Asn Ala Val His Arg Gln Leu Met		
165	170	175
Ser Asp Val Pro Tyr Gly Val Leu Leu Ser Gly Gly Leu Asp Ser Ser		
180	185	190
Val Ile Ser Ala Ile Ala Lys Lys Tyr Ala Ala Lys Arg Ile Glu Thr		
195	200	205
Asp Gly Ala Ser Asp Ala Trp Trp Pro Gln Leu His Ser Phe Ala Ile		
210	215	220
Gly Leu Lys Gly Ala Pro Asp Leu Ile Lys Ala Arg Glu Val Ala Glu		
225	230	235
Tyr Ile Gly Thr Val His His Glu Ile Asn Tyr Thr Leu Gln Glu Gly		
245	250	255
Leu Asp Ala Ile Arg Asp Val Ile Tyr Phe Ile Glu Thr Tyr Asp Val		
260	265	270
Thr Thr Val Arg Ala Ser Thr Pro Met Tyr Leu Leu Ala Arg Val Ile		
275	280	285
Lys Ser Met Gly Ile Lys Met Val Leu Ser Gly Glu Gly Ala Asp Glu		
290	295	300
Ile Phe Gly Gly Tyr Leu Tyr Phe His Lys Ala Pro Asp Ala Arg Ala		
305	310	315
Phe His Glu Glu Thr Val Arg Lys Leu Ser Lys Leu His Leu Tyr Asp		
325	330	335
Cys Leu Arg Ala Asn Lys Ser Leu Ala Ala Trp Gly Val Glu Gly Arg		
340	345	350
Val Pro Phe Leu Asp Lys Glu Phe Leu Asp Val Ala Met Gln Leu Asp		
355	360	365
Pro Glu Ile Lys Met Ala Pro Gly Lys Val Ile Glu Lys Lys Val Leu		
370	375	380
Arg Glu Ala Phe Ala Asp Met Leu Pro Ser Gly Ile Ala Trp Arg Gln		
385	390	395
Lys Glu Gln Phe Ser Asp Gly Val Gly Tyr Ser Trp Ile Asp Thr Leu		
405	410	415
Lys Glu Ile Thr Ala Thr Ala Val Ser Asp Glu Gln Met Ala His Ala		
420	425	430
Ala Glu Arg Phe Pro Ile His Thr Pro Met Asn Lys Glu Glu Tyr Tyr		
435	440	445
Tyr Arg Ser Ile Phe Glu Glu His Phe Pro Ser Glu Ser Ala Ala Arg		
450	455	460
Ser Val Pro Ser Ile Pro Ser Val Ala Cys Ser Thr Ala Glu Ala Leu		
465	470	475
Ala Trp Asp Thr Thr Phe Lys Asn Leu Asn Asp Pro Ser Gly Arg Ala		
485	490	495
Val Lys Gly Val His Glu Glu Ala Tyr		
500	505	

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

Gly 1	Ser	Val	Asn	Glu 5	Glu	Gly	Ser	Pro	Glu 10	Gly	Leu	Leu	Arg	Lys 15	Val
Gln	Leu	Ile	Arg 20	Ile	Pro	Leu	Arg	Leu 25	Gly	Glu	Asp	Ala 30	Phe	Thr	Thr
Gly	Glu	Ile 35	Ser	Glu	Gly	Lys	Ala 40	Glu	Lys	Leu	Ile	Arg 45	Leu	Met	Lys
Ala	Tyr 50	Lys	Gln	Leu	Met	Lys 55	Ile	Phe	Glu	Val	Ser 60	Asp	Tyr	Arg	Ala
Cys 65	Ala	Thr	Ser	Ala	Met 70	Arg	Asp	Ala	Arg	Asn 75	Gly	Lys	Glu	Ile	Thr
Arg	Lys	Ile	Glu	Lys 85	Lys	Thr	Gly	Ile	Arg 90	Val	Glu	Ile	Ile	Asp 95	Gly
Gln	Glu	Glu	Ala 100	His	Ile	Val	Tyr	Asp 105	Asn	His	Ile	Glu	Gln 110	Leu	Phe
Ala	Ser	Gly 115	Gln	Asn	Tyr	Leu	Tyr 120	Val	Asp	Val	Gly	Gly 125	Gly	Ser	Thr
Glu	Ile	Asn 130	Leu	Ile	Cys	Asp 135	Ser	Glu	Leu	Lys	Ser 140	Ser	Arg	Ser	Tyr
Asn 145	Ile	Gly	Thr	Val	Arg 150	Met	Leu	Ser	Gly	Met 155	Val	Lys	Asn	Glu	Glu 160
Lys	Glu	Gln	Met	Arg 165	Thr	Asp	Leu	Gln	Ala 170	Leu	Ala	Ala	Glu	Tyr 175	Thr
Pro	Ile	Gln 180	Ile	Ile	Gly	Ser	Gly 185	Gly	Asn	Ile	Asn	Lys 190	Leu	Phe	Arg
Leu	Ala	Asp 195	Lys	Lys	Asp	Lys	Lys 200	Gln	Ser	Phe	Leu	Pro 205	Ile	Glu	Ser
Leu	Lys 210	Glu	Ile	Cys	Glu	Thr	Leu 215	Lys	Ala	Leu	Ser	Lys 220	Glu	Glu	Arg
Ile 225	Lys	Gln	Phe	Lys	Leu 230	Lys	Pro	Asp	Arg	Ala 235	Asp	Val	Ile	Val	Pro 240
Ala	Ala	Glu	Ile	Phe 245	Leu	Glu	Val	Ala	Lys 250	Gln	Val	Asn	Ala 255	Thr	Gly
Ile	Thr	Val	Pro 260	Thr	Ile	Gly	Leu	Ser 265	Asp	Gly	Ile	Ile	Asp 270	Ser	Leu
Tyr	Thr	Lys 275	Asn	Met	Arg	Met	Glu 280	Thr	Asp	Ala	Lys				

<400> 7293

Ile	Cys	Pro	Asn	Val	Phe	Phe	Leu	Thr	Arg	His	Gly	Asp	Tyr	Pro	Lys
1				5					10					15	
Asp	Phe	His	Arg	Val	Tyr	Thr	Lys	Arg	Lys	Arg	Ile	Thr	Val	Arg	Tyr
			20					25					30		
Arg	Ile	Met	Asp	Thr	Phe	Ile	Gln	Thr	Thr	Asp	Phe	Ile	Leu	Phe	Leu
		35					40					45			
Cys	Phe	Ser	Leu	Met	Thr	Val	Tyr	Leu	Gly	Val	Leu	Ala	Ile	Ala	Ala
	50					55					60				
Ser	Leu	Arg	Asn	Asp	Thr	Pro	Tyr	Pro	Gln	Ala	Gly	Lys	Arg	His	Arg

65		70		75		80									
Phe	Ala	Ile	Leu	Val	Pro	Pro	Gly	Ser	Thr	Ser	Leu	Pro	Leu	Pro	His
		85						90						95	
Tyr	Pro	Glu	Glu	Leu	Tyr	Gln	Val	Phe	Thr	Tyr	Glu	Asp	Leu	Thr	Glu
		100						105					110		
Ala	Ile	Ala	Ala	Leu	Asn	Glu	Asn	Asp	Phe	Asp	Gly	Val	Val	Val	Leu
		115					120					125			
Gly	Glu	Thr	Thr	Arg	Ile	Glu	Pro	Ala	Phe	Leu	Glu	Glu	Ile	Asn	Ser
		130					135					140			
Val	Phe	Asp	Ala	Gly	Ile	Gln	Ala	Ile	Gln	Leu	Arg	His	Ile	Thr	Glu
		145				150				155					160
Lys	Arg	Ser	Thr	Arg	Lys	Gln	Tyr	Phe	Gln	Ala	Leu	Asn	Glu	Glu	Ile
			165						170					175	
Thr	Gln	Ala	Leu	Phe	Gly	Thr	Gly	Ala	Thr	Arg	Leu	Gly	Val	Ser	Ser
		180						185					190		
Ala	Leu	Tyr	Gly	Ala	Asp	Met	Val	Leu	Asp	Leu	Lys	Trp	Leu	Lys	Lys
		195					200					205			
Asn	Gln	Lys	Ser	Arg	Lys	Ser	Asn	Leu	Glu	Arg	Arg	Leu	Val	Arg	Gln
		210				215					220				
Gly	Ile	Phe	Val	Glu	Tyr	Leu	Glu	Lys	Val	Lys	Val	Tyr	Ser	Ser	Asp
		225			230					235					240
Ile	Arg	Ala	Pro	Arg	Tyr	Lys	Val	Arg	Phe	Ser	Lys	Ala	Leu	Arg	Ala
			245						250					255	
Leu	Pro	Glu	Ala	Ile	Phe	Thr	Ala	His	Trp	Asp	Tyr	Cys	Asn	Lys	Ile
			260					265					270		
Leu	Arg	Trp	Ile	Leu	Pro	Ser	Arg	Lys	Thr	Asn	Leu	Ile	Ser	Ile	Ala
		275					280					285			
Leu	Ile	Ala	Thr	Ala	Leu	Leu	Cys	Tyr	Asp	Trp	Ser	Leu	Ser	Leu	Lys
		290				295					300				
Trp	Trp	Ser	Leu	Leu	Tyr	Ile	Leu	Met	Phe	Ile	Ile	Cys	Leu	Ala	Ile
		305			310					315					320
Pro	Asp	Tyr	Leu	Val	Arg	Gln	Lys	Thr	Lys	Lys					
			325						330						

<210> 7294

<211> 165

<212> PRT

<213> B.fragilis

<400> 7294

Lys	Ala	Glu	Lys	Met	Lys	Lys	Ser	Ile	Leu	Ile	Pro	Phe	Leu	Phe	Met
1				5					10					15	
Gly	Leu	Leu	Ala	Phe	Ala	Ser	Cys	Lys	Gly	Thr	Ser	Glu	Asn	Lys	Ser
			20					25					30		
Thr	Thr	Ala	Thr	Asp	Thr	Val	Gln	Ala	Glu	Lys	Pro	Gln	Ser	Gly	Thr
		35					40					45			
Ile	His	Leu	Thr	Arg	Ala	Glu	Phe	Leu	Lys	Lys	Ile	Ala	Asp	Tyr	Glu
		50				55					60				
Asn	His	Ser	Lys	Glu	Trp	Lys	Tyr	Leu	Gly	Asp	Lys	Pro	Ala	Ile	Val
		65			70					75				80	
Asp	Phe	Tyr	Ala	Asp	Trp	Cys	Gly	Pro	Cys	Lys	Met	Val	Ala	Pro	Ile
			85					90					95		
Leu	Glu	Glu	Leu	Ser	Lys	Glu	Tyr	Ala	Gly	Lys	Ile	Tyr	Ile	Tyr	Lys
			100					105					110		
Val	Asn	Val	Asp	Lys	Glu	Pro	Glu	Leu	Ala	Arg	Asp	Phe	Gly	Ile	Gln
		115					120					125			
Ser	Ile	Pro	Thr	Ile	Trp	Phe	Val	Pro	Met	Lys	Gly	Glu	Pro	Gln	Val
		130				135					140				
Asn	Met	Gly	Ala	Leu	Ser	Lys	Glu	Gln	Leu	Lys	Gly	Tyr	Ile	Asp	Lys

145

150

155

160

Val Leu Leu Lys Gln
165

<210> 7295

<211> 281

<212> PRT

<213> B.fragilis

<400> 7295

Thr	Asp	Arg	Lys	Ala	Ile	Thr	His	Gln	Arg	Asn	Met	Lys	Asp	Ile	Leu
1				5					10					15	
Ser	Glu	Ile	Ile	Ala	Asn	Lys	Arg	Phe	Glu	Ile	Asp	Leu	Gln	Lys	Gln
		20						25					30		
Ala	Ile	Pro	Ser	Glu	Gln	Leu	Gln	Glu	Lys	Leu	Ser	Asp	Glu	Val	Gln
		35					40					45			
Pro	Gly	Tyr	Ser	Met	Lys	Gln	Ala	Leu	Ala	Ser	Ser	Ala	Thr	Gly	Ile
	50					55					60				
Ile	Ala	Glu	Phe	Lys	Arg	Arg	Ser	Pro	Ser	Lys	Gly	Trp	Ile	Tyr	Lys
65					70					75				80	
Asn	Ala	Cys	Pro	Glu	Gln	Val	Val	Pro	Asp	Tyr	Ile	Ala	Ala	Gly	Ala
			85						90					95	
Ser	Ala	Leu	Ser	Ile	Leu	Thr	Asp	Glu	Lys	Phe	Phe	Gly	Gly	Ser	Leu
		100						105						110	
Lys	Asp	Ile	Arg	Thr	Ala	Arg	Pro	Leu	Val	Asn	Ile	Pro	Ile	Leu	Arg
	115						120					125			
Lys	Asp	Phe	Ile	Ile	Asp	Glu	Tyr	Gln	Leu	Phe	Gln	Ala	Lys	Ile	Val
	130					135					140				
Gly	Ala	Asp	Ala	Ile	Leu	Leu	Ile	Ala	Ala	Ala	Leu	Glu	Ala	Asp	Gln
145					150					155				160	
Cys	His	Ala	Leu	Ala	Ala	Lys	Ala	His	Glu	Leu	Gly	Leu	Glu	Val	Leu
			165						170					175	
Leu	Glu	Ile	His	Thr	Ala	Glu	Glu	Leu	Pro	Phe	Ile	Asn	Lys	Glu	Ile
		180						185					190		
Asp	Met	Val	Gly	Ile	Asn	Asn	Arg	Asn	Leu	Gly	Thr	Phe	Phe	Thr	Asp
	195						200					205			
Val	Glu	Asn	Ser	Phe	Arg	Leu	Ala	Gly	Gln	Leu	Pro	Gln	Asp	Ala	Leu
	210					215					220				
Leu	Val	Ser	Glu	Ser	Gly	Ile	Ser	Asp	Pro	Glu	Thr	Val	Lys	Arg	Leu
225					230					235				240	
Arg	Lys	Ala	Gly	Phe	Arg	Gly	Phe	Leu	Ile	Gly	Glu	Thr	Phe	Met	Lys
			245						250					255	
Ala	Gln	Gln	Pro	Gly	Gln	Lys	Leu	Lys	Glu	Phe	Ile	Asn	Asp	Leu	Asn
			260					265					270		
Ser	Pro	Gln	Ser	Asp	Thr	Glu	Ser	His							
		275					280								

<210> 7296

<211> 238

<212> PRT

<213> B.fragilis

<400> 7296

Ile	Arg	Cys	Leu	Met	Asp	Lys	Leu	Gln	Lys	Tyr	Lys	Pro	Thr	Asp	Lys
1				5					10					15	
Met	Ile	Asp	Leu	Ile	Gly	Asp	Asn	Tyr	Ser	Leu	Leu	Gln	Val	Met	Ser
		20						25					30		
Arg	Phe	Gly	Leu	Ser	Leu	Gly	Phe	Gly	Asp	Lys	Thr	Val	Lys	Glu	Val
		35					40					45			

Cys Glu Met Asn Asn Val Asp Cys Gln Thr Phe Leu Val Val Val Asn
 50 55 60
 Phe Met Ala Glu Gly Phe Ser Arg Met Asp Gly Ser Ala Asp Asp Ile
 65 70 75 80
 Ser Ile Pro Ala Leu Val Asp Tyr Leu Arg Gln Ala His Ile Tyr Phe
 85 90 95
 Leu Asp Tyr Cys Leu Pro Ala Ile Arg Arg Lys Leu Ile Glu Ala Ile
 100 105 110
 Asp Cys Ser Gln Asp Asp Val Ser Phe Leu Ile Leu Lys Phe Phe Asp
 115 120 125
 Gly Tyr Met Arg Glu Val Arg Lys His Met Glu Tyr Glu Glu Lys Thr
 130 135 140
 Val Phe Lys Tyr Val Asp Thr Leu Ile His Gly Asn Ala Pro Lys Asn
 145 150 155 160
 Tyr Gln Ile Ser Thr Phe Ser Lys His His Asp Gln Val Gly Glu Arg
 165 170 175
 Leu Thr Glu Leu Lys Asn Ile Ile Ile Lys Tyr Cys Pro Ala Lys Ala
 180 185 190
 Asn Thr Asn Val Leu Asn Ala Ala Leu Phe Asp Ile Tyr Ala Cys Glu
 195 200 205
 Glu Gly Leu Glu Ser His Cys Lys Val Glu Asp Tyr Leu Phe Val Pro
 210 215 220
 Ala Ile Leu Lys Leu Glu Arg Arg Met Arg Glu Asn Glu Lys
 225 230 235

<210> 7297

<211> 265

<212> PRT

<213> B.fragilis

<400> 7297

Lys Tyr Met Asn Arg Ile Asn Gln Leu Phe Asp Ser Asn Pro Arg Asp
 1 5 10 15
 Leu Leu Ser Ile Tyr Phe Cys Ala Gly Tyr Pro Thr Leu Glu Gly Thr
 20 25 30
 Thr Glu Val Ile Arg Thr Leu Glu Lys His Gly Val Asn Met Ile Glu
 35 40 45
 Ile Gly Ile Pro Phe Ser Asp Pro Met Ala Asp Gly Met Val Ile Gln
 50 55 60
 Asn Ala Ala Thr Gln Ala Leu Arg Asn Gly Met Ser Leu Arg Leu Leu
 65 70 75 80
 Phe Glu Gln Leu His Asp Ile Arg Arg Asp Val Lys Ile Pro Leu Ile
 85 90 95
 Leu Met Gly Tyr Leu Asn Pro Ile Met Gln Phe Gly Phe Asp Asn Phe
 100 105 110
 Cys Arg Gln Cys Ala Glu Cys Gly Ile Asp Gly Val Ile Ile Pro Asp
 115 120 125
 Leu Pro Phe Lys Asp Tyr Gln Glu His Phe Arg Thr Ile Ala Glu Arg
 130 135 140
 Tyr Asp Val Lys Val Ile Met Leu Ile Thr Pro Glu Thr Ser Glu Glu
 145 150 155 160
 Arg Val Arg Glu Ile Asp Glu His Thr Asp Gly Phe Ile Tyr Met Val
 165 170 175
 Ser Ser Ala Ala Thr Thr Gly Ala Gln Gln Asp Phe Asp Gly Gln Lys
 180 185 190
 Arg Ala Tyr Phe Lys Lys Ile Glu Lys Met Asn Leu Arg Asn Pro Arg
 195 200 205
 Met Val Gly Phe Gly Ile Ser Asn Glu Ala Thr Phe Arg Ala Ala Cys
 210 215 220

Glu Asn Ala Ser Gly Ala Ile Ile Gly Ser Arg Phe Val Thr Leu Leu
 225 230 235 240
 His Glu Glu Lys Asn Pro Glu Lys Ala Ile Thr Arg Leu Lys Ala Ile
 245 250 255
 Leu Asn Leu Ser Ser Asn Asp Leu Arg
 260 265

<210> 7298

<211> 388

<212> PRT

<213> B.fragilis

<400> 7298

Phe Cys Met Lys Thr Ser Tyr Leu Leu Leu Ser Ser Ala Leu Leu Leu
 1 5 10 15
 Gly Cys Leu Ser Ala Cys Asn Thr Ser Pro Arg Glu Pro Lys Ala Met
 20 25 30
 Glu Ala Asn Asp Gly Ser Val Thr Thr Ile Glu Ser Asn Gly Asn Lys
 35 40 45
 Leu Thr Val Cys Asp Leu Ser Ala Val Lys Asp Thr Ile Glu Val Pro
 50 55 60
 Leu Ser Glu Phe Val Glu Asp Cys Arg Ile Val Arg Phe Glu Thr Ser
 65 70 75 80
 Glu Glu Ala Tyr Phe Lys Ala Trp Phe Ile Asn Ala Thr Asp Lys His
 85 90 95
 Ile Gly Ile Arg Gln Gly Asn Gln Asp Val Phe Lys Leu Phe Asp Arg
 100 105 110
 Asp Gly Lys Phe Leu Tyr Asn Val Gly Ser Val Gly Ser Gly Pro Gly
 115 120 125
 Glu Tyr Asp Thr Thr Leu Tyr Asp Glu Cys Ile Asp Glu Lys Asn Gly
 130 135 140
 His Ile Phe Phe Thr Pro Phe Val Gly Lys Arg Ile Met Met Tyr Asp
 145 150 155 160
 Ile Asn Gly Gln Trp Ile Lys Asp Ile Pro Leu Pro Met Gln Ile Asn
 165 170 175
 Lys Ala Lys Ile Trp Val Asn Glu Asp Gly Ser Leu Ser Val Val His
 180 185 190
 Met Pro Phe Glu Glu Gly Glu Pro Leu Ala Phe Arg Val Asp Thr Glu
 195 200 205
 Gly Asn Ile Leu Asn Gln Ile Pro Ala Thr Ala Ala Thr Lys Val Met
 210 215 220
 Asn Phe Asp Gly Glu Val Phe Ser Tyr Arg Asn Cys Gly Asp Phe Asp
 225 230 235 240
 Phe Phe His Thr Gly Ile Asp Thr Leu Phe Thr Tyr Asp Ser Ala Gly
 245 250 255
 Asn Lys Leu Leu Pro Lys Phe Thr Met Thr Phe Pro Asn Met Asn Glu
 260 265 270
 Lys Pro Ile His Leu Tyr Tyr Arg Leu Pro His His Phe Ile Val Thr
 275 280 285
 Tyr Trp Gly Asn Lys Gly Glu Gly Gly Gly Asp Val Leu Val Asp Thr
 290 295 300
 Glu Lys Asn Ala Ser Ser Tyr Phe Arg Leu Val Asn Asp Phe Tyr Gly
 305 310 315 320
 Asn Leu Pro Ile Pro Ala Pro Gly His Ser Phe Tyr Arg Gly Tyr Phe
 325 330 335
 Ile Gln Ser Leu Glu Pro Gly Gln Leu Ile Glu Lys Ile Glu Lys Gln
 340 345 350
 Ile Ala Ser Gly Lys Cys Ser Gly Gln Asp Glu Gln Lys Leu Lys Glu
 355 360 365

Leu Ala Ala Thr Leu Thr Glu Asn Asp Asn Asn Val Leu Phe Ile Gly
 370 375 380
 Lys Val Lys Lys
 385

<210> 7299
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 7299
 Met Gln Arg Glu Ser Gln Ser Arg Gln Ser Asp Cys Arg Thr Val Ser
 1 5 10 15
 Ser Thr Ala Ser Ile Pro Arg Ile Cys Ala Trp Lys Arg Thr Leu Asn
 20 25 30
 Lys Thr Gly His His Arg Leu His Arg Leu Thr Gln Ile Ile Tyr Arg
 35 40 45
 Val Asp Ser Trp Tyr Lys Arg Ile Tyr Ala Asn Val Ser Tyr Asp Ser
 50 55 60
 Pro Gln Ile Thr Arg Ile Phe Thr Asp
 65 70

<210> 7300
 <211> 269
 <212> PRT
 <213> B.fragilis

<400> 7300
 Ile Ala Leu Leu Phe Ile Ser Leu Lys Ala Asn Gln Lys Leu Lys Tyr
 1 5 10 15
 Met Lys Ile Lys Lys Leu Leu Phe Ala Ser Ala Leu Leu Phe Ser Ala
 20 25 30
 Tyr Asn Ala Ser Ala Gln Thr Gln Val Ile Ala His Arg Gly Phe Trp
 35 40 45
 Lys Thr Glu Gly Ser Ala Gln Asn Ser Ile Ala Ala Leu Leu Lys Ala
 50 55 60
 Asp Ser Ile Gly Cys Tyr Gly Ser Glu Phe Asp Val Trp Leu Ala Ala
 65 70 75 80
 Asp Asp Gln Leu Val Asn His Asp Pro Thr Phe Lys Gly Lys Arg
 85 90 95
 Met Glu Asn Ser Pro Ser Thr Ala Leu Thr Ala Ile Lys Leu Asp Asn
 100 105 110
 Gly Glu Ser Leu Pro Thr Leu Ala Lys Tyr Leu Lys Ala Ala Gln Pro
 115 120 125
 Leu His Thr Arg Leu Ile Leu Glu Leu Lys Ala His Ser Thr Pro Leu
 130 135 140
 Arg Glu Thr Lys Ala Ile Glu Lys Ile Val Ala Leu Val Lys Asp Met
 145 150 155 160
 Gly Leu Glu Glu Arg Met Glu Tyr Ile Thr Phe Ser Leu His Ala Thr
 165 170 175
 Lys Glu Phe Ile Arg Leu Ala Pro Glu Gly Thr Pro Val Tyr Tyr Leu
 180 185 190
 Asp Gly Asn Leu Ser Pro Lys Glu Leu Lys Glu Leu Gly Cys Ala Gly
 195 200 205
 Pro Asp Tyr His Tyr Thr Val Phe Arg Lys His Pro Glu Trp Ile Gln
 210 215 220
 Glu Cys His Asp Leu Gly Met Lys Val Asn Ala Trp Thr Val Asn Lys
 225 230 235 240
 Thr Asp Asp Met Lys Trp Leu Ile Asp Arg Lys Val Asp Phe Ile Thr

245 250 255
 Thr Asn Glu Pro Val Gln Leu Lys Asn Leu Leu Lys Lys
 260 265

<210> 7301
 <211> 627
 <212> PRT
 <213> B.fragilis

<400> 7301

Met Glu Gln Leu Lys His Glu Cys Gly Val Ala Met Ile Arg Leu Leu
 1 5 10 15
 Lys Pro Leu Glu Tyr Tyr Glu Lys Lys Tyr Gly Thr Trp Met Tyr Gly
 20 25 30
 Leu Asn Lys Leu Tyr Leu Leu Met Glu Lys Gln His Asn Arg Gly Gln
 35 40 45
 Glu Gly Ala Gly Leu Ala Cys Val Lys Leu Glu Val Asn Pro Gly Glu
 50 55 60
 Glu Tyr Met Phe Arg Glu Arg Ala Leu Gly Ser Gly Ala Ile Thr Glu
 65 70 75 80
 Ile Phe Glu Thr Val Gln Ser Asn Phe Lys Asp Leu Ser Lys Glu Gln
 85 90 95
 Leu His Asp Ala Ala Phe Ala Lys Arg Thr Leu Pro Phe Ala Gly Glu
 100 105 110
 Ala Tyr Met Gly His Leu Arg Tyr Ser Thr Thr Gly Lys Ser Gly Ile
 115 120 125
 Ser Tyr Val His Pro Phe Leu Arg Arg Asn Asn Trp Arg Ala Lys Asn
 130 135 140
 Leu Ala Leu Cys Gly Asn Phe Asn Met Thr Asn Val Asp Glu Ile Phe
 145 150 155 160
 Ala Arg Ile Thr Ala Ile Gly Gln His Pro Arg Lys Tyr Ala Asp Thr
 165 170 175
 Tyr Ile Met Leu Glu Gln Val Gly His Arg Leu Asp Arg Glu Val Glu
 180 185 190
 Arg Leu Phe Asn Leu Ala Glu Ala Glu Gly Leu Thr Gly Met Gly Val
 195 200 205
 Thr His Tyr Ile Glu Asp His Ile Asp Leu Ala Asn Val Leu Arg Thr
 210 215 220
 Ser Ser Lys Glu Trp Asp Gly Gly Tyr Val Met Cys Gly Leu Thr Gly
 225 230 235 240
 Ser Gly Glu Ser Phe Ala Leu Arg Asp Pro Trp Gly Ile Arg Pro Ala
 245 250 255
 Phe Trp Tyr Gln Asp Asp Glu Ile Ala Val Leu Ala Ser Glu Arg Pro
 260 265 270
 Val Ile Gln Thr Ala Leu Asn Val Pro Ile Gly Glu Ile Arg Glu Leu
 275 280 285
 Leu Pro Gly Gln Ala Leu Leu Ile Ser Lys Glu Gly Lys Leu Arg Thr
 290 295 300
 Ala Gln Ile Asn Lys Ala Arg Glu Lys Lys Ala Cys Ser Phe Glu Arg
 305 310 315 320
 Ile Tyr Phe Ser Arg Gly Ser Asp Ala Asp Ile Tyr Lys Glu Arg Lys
 325 330 335
 Gln Leu Gly Glu Lys Leu Val Pro Asn Ile Leu Lys Ala Ile Asp Asn
 340 345 350
 Asp Leu Asp His Thr Val Phe Ser Phe Ile Pro Asn Thr Ala Glu Val
 355 360 365
 Ala Phe Tyr Gly Met Leu Gln Gly Leu Asp Asn Tyr Leu Asn Glu Glu
 370 375 380
 Lys Val Arg Gln Ile Ala Ser Leu Gly His His Pro Asp His Asp Glu

385 390 395 400
 Leu Glu Val Ile Leu Ser Arg Arg Ile Arg Ser Glu Lys Val Ala Ile
 405 410 415
 Lys Asp Ile Lys Leu Arg Thr Phe Ile Ala Glu Gly Asn Ser Arg Asn
 420 425 430
 Asp Leu Ala Ala His Val Tyr Asp Ile Thr Tyr Gly Ser Leu Arg Ser
 435 440 445
 Gly Ile Asp Asn Leu Val Ile Ile Asp Asp Ser Ile Val Arg Gly Thr
 450 455 460
 Thr Leu Lys Gln Ser Ile Ile Gly Ile Leu Asp Arg Leu Gly Pro Lys
 465 470 475 480
 Lys Ile Val Ile Val Ser Ser Ser Pro Gln Val Arg Tyr Pro Asp Tyr
 485 490 495
 Tyr Gly Ile Asp Met Ala Lys Met Ser Glu Phe Ile Ala Phe Lys Ala
 500 505 510
 Ala Ile Glu Leu Leu Lys Asp Arg Asp Met Lys Asp Val Ile Ala Ser
 515 520 525
 Ala Tyr Arg Lys Ser Lys Asp Gln Val Gly Leu Pro Lys Glu Gln Met
 530 535 540
 Val Asn Tyr Val Lys Asp Ile Tyr Ala Pro Phe Thr Asp Glu Glu Ile
 545 550 555 560
 Ser Glu Lys Met Val Glu Leu Leu Thr Pro Lys Gly Thr Lys Ala Lys
 565 570 575
 Val Gln Ile Val Tyr Gln Pro Leu Glu Gly Leu His Glu Ala Cys Pro
 580 585 590
 Asn His Thr Gly Asp Trp Tyr Phe Ser Gly Asn Tyr Pro Thr Pro Gly
 595 600 605
 Gly Val Lys Leu Leu Asn Glu Ala Phe Ile Asn Tyr Ile Glu Gln Val
 610 615 620
 Tyr Gln Phe
 625

<210> 7302

<211> 352

<212> PRT

<213> B.fragilis

<400> 7302

Lys Asn Lys Leu Ile Thr Pro Leu Met Thr Thr Thr Asn Glu Gln Glu
 1 5 10 15
 Gln Ser Arg Ala Tyr Ile Leu Ala Gly Ile Phe Thr Leu Ser Leu Arg
 20 25 30
 Leu Val Val Gly Trp Thr Tyr Phe Ser Ala Phe Trp Arg Arg Leu Val
 35 40 45
 Leu Glu Asn Lys Leu Ile Pro Asp Ser Ala Gly Tyr Ile Gly Glu Lys
 50 55 60
 Phe Asn His Phe Leu Pro Asn Ser Ile Gly Ile Arg Pro Val Ile Glu
 65 70 75 80
 Tyr Leu Val Ser Thr Pro Asp Met Leu Trp Trp Ala Met Val Ile Phe
 85 90 95
 Thr Leu Val Glu Gly Ile Val Gly Leu Leu Tyr Met Leu Gly Phe Phe
 100 105 110
 Thr Arg Leu Met Ser Ile Gly Val Phe Ser Leu Ala Thr Gly Ile Leu
 115 120 125
 Leu Gly Ser Gly Trp Leu Gly Thr Thr Cys Leu Asp Glu Trp Gln Ile
 130 135 140
 Gly Ile Leu Gly Val Ala Ala Gly Phe Thr Ile Phe Leu Ser Gly Gly
 145 150 155 160
 Gly Lys Tyr Ser Val Asp His Leu Ile Glu Arg Lys Phe Ser Leu Lys

165 170 175
 Lys Lys Ala Ala Trp Leu Ser Trp Leu Thr Ser Gly Glu Leu Pro Val
 180 185 190
 Ser Ala Lys Arg Phe Ala Asn Val Ser Val Ala Gly Ala Ile Val Ile
 195 200 205
 Phe Thr Leu Ser Leu Tyr Thr Asn Gln Glu Phe His Asn Gly Val Trp
 210 215 220
 Gly Pro Leu His Asn Lys Ser Val Lys Pro Lys Ile Glu Ile Ser Asp
 225 230 235 240
 Ala Gln Ile Glu Asn Asn Ser Leu Ser Phe Ser Val Tyr Arg Val Glu
 245 250 255
 Gly Val Asp Val Tyr Gly Ser Phe Leu Ile Gly Ile Ser Leu Lys Asn
 260 265 270
 Ala Asp Gly Asp Ile Val Leu Glu Lys Lys Gly Glu Glu Leu Ala Asp
 275 280 285
 Phe Pro Ile Gly Asn Ile Asp Asn Lys Tyr Ile Ala Arg Val Ala Pro
 290 295 300
 Gly Lys His Ser Leu Val Ile Pro Leu Gly Ser Lys Ala Thr Leu Thr
 305 310 315 320
 Ile Asp Asp Thr Ala Ile Gly Gly Leu Pro Lys Gly Lys Tyr Glu Leu
 325 330 335
 Val Leu Thr Asp Ile Ser Gly Ile Thr Trp Lys Lys Glu Ile Ile His
 340 345 350

<210> 7303
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 7303

Lys Pro Glu Leu Phe Leu Leu Pro Val Val Glu Ser Thr Tyr Lys Ser
 1 5 10 15
 Ile Lys Ser Val Ile Met Asn Ile Ala Glu Gln Leu Asp Ala Val Ser
 20 25 30
 Gly Thr Asn Arg Leu Val Leu Val Glu Phe Tyr Ala Asp Trp Ser Pro
 35 40 45
 His Tyr Glu Trp Leu Glu Pro Val Val Arg Thr Tyr Glu Lys Gln Val
 50 55 60
 Ser Glu Val Ile Lys Val Asn Ile Val Glu Asp Lys Ala Val Ala Asp
 65 70 75 80
 Ser Phe Asn Ile Glu Thr Ala Pro Ala Phe Ile Leu Leu Gln Arg Gly
 85 90 95
 His Glu Leu Trp Arg Gln Val Gly Glu Leu Thr Ile Asp Glu Leu Lys
 100 105 110
 Leu Val Leu Glu Glu Phe Lys
 115

<210> 7304
 <211> 692
 <212> PRT
 <213> B.fragilis

<400> 7304

Thr Leu Ile Arg Met Lys Ser Asp Glu Ala Lys Arg Lys Lys Leu Tyr
 1 5 10 15
 Val Glu Arg Asp Ile Ser Trp Met Tyr Phe Asn Gln Arg Ile Leu Leu
 20 25 30
 Glu Ala Ala Arg Pro Glu Val Pro Leu Leu Glu Gln Leu Thr Phe Leu
 35 40 45

Gly Ile Tyr Ser Asn Asn Leu Asp Glu Phe Phe Arg Val Arg Val Ala
 50 55 60
 Thr Leu Asn Arg Ile Val Glu Tyr Asp Asp Lys Asn Ile Arg Glu Glu
 65 70 75 80
 Arg Asp Thr Ala Ala Arg Thr Leu Lys Gln Ile Gly Lys Leu His Asn
 85 90 95
 Gln Tyr Tyr Arg Gln Phe Glu Glu Thr Phe Ala Ser Ile Met Glu Lys
 100 105 110
 Leu Lys Gln Glu Asn Ile His Val Ile Lys Asp Thr Glu Leu Thr Pro
 115 120 125
 Glu Gln Glu His Phe Ile Thr Ser Leu Tyr Arg Asn Arg Leu Asn Gly
 130 135 140
 Ser Thr Asn Pro Leu Phe Leu Thr Lys Thr Ser Arg His Thr Asp Asp
 145 150 155 160
 Gln Thr Asp Glu Asp Ile Tyr Leu Ala Ile Arg Leu Leu Arg Lys Asp
 165 170 175
 Ser Glu Gly Lys Val Lys Met Lys Asp Tyr Ala Val Ile Gly Leu Pro
 180 185 190
 Thr Ala Glu Phe Gly Arg Phe Ile Arg Leu Pro Asp Ser Glu Gly Lys
 195 200 205
 Thr Tyr Leu Met Phe Leu Asp Asp Val Ile Arg Tyr Cys Leu Pro Met
 210 215 220
 Ile Phe Ile Gly Met Asn Tyr Thr Asp Tyr Glu Ala Tyr Thr Phe Lys
 225 230 235 240
 Phe Thr Lys Asp Ala Glu Met Glu Ile Asp Ser Asp Leu Arg Thr Gly
 245 250 255
 Val Leu Gln Lys Ile Ser Lys Gly Ile Lys Ser Arg Lys Arg Gly Glu
 260 265 270
 Pro Ile Arg Phe Val Tyr Asp Lys Glu Met Pro Lys Asp Leu Leu Arg
 275 280 285
 Lys Leu Thr Asp Arg Leu Asn Val Asp Lys Asn Asp Thr Arg Val Ala
 290 295 300
 Gly Gly Arg Tyr His Asn Phe Lys Asp Leu Met Lys Phe Pro Asp Cys
 305 310 315 320
 Gly Arg Ser Asp Leu Lys Tyr Pro Ala Trp Pro Pro Val Phe Lys Gln
 325 330 335
 Glu Leu Asn Gly Thr Glu Ser Ile Leu Arg Leu Ile Arg Lys Gln Asp
 340 345 350
 Arg Ser Leu His Tyr Pro Tyr Gln Ser Phe Asp Thr Val Ile Arg Val
 355 360 365
 Leu Arg Glu Ala Ala Ile Ser Lys Glu Val Lys Ser Ile Lys Met Thr
 370 375 380
 Leu Tyr Arg Leu Ala Lys Asp Ser Lys Val Val Lys Ala Leu Ile Cys
 385 390 395 400
 Ala Ala Gln Asn Gly Lys Lys Val Thr Val Ile Ile Glu Leu Leu Ala
 405 410 415
 Arg Phe Asp Glu Ala Ser Asn Ile Ser Trp Ser Lys Arg Met Gln Glu
 420 425 430
 Ala Gly Ile Lys Val Ile Phe Gly Val Glu Gly Leu Lys Ile His Ser
 435 440 445
 Lys Leu Val His Ile Gly Thr Arg Phe Gly Asp Leu Ala Cys Ile Ser
 450 455 460
 Thr Gly Asn Phe His Glu Gly Asn Ala Arg Met Tyr Thr Asp Phe Thr
 465 470 475 480
 Ile Met Thr Ala His Arg Ser Ile Val Arg Glu Val Asp Arg Val Phe
 485 490 495
 Asp Phe Ile Glu Lys Pro Tyr Leu Pro Val Asn Phe Lys Glu Leu Leu
 500 505 510
 Val Ser Pro Asn Asp Met Arg Lys Arg Leu Thr Ala Leu Ile Asn Gln

515 520 525
 Glu Ile Lys Asn Lys Arg Gln Gly Lys Glu Ala Tyr Ile Leu Ala Lys
 530 535 540
 Val Asn His Ile Thr Asp Arg Ile Leu Ile Gln Lys Leu Tyr Glu Ala
 545 550 555 560
 Ser Thr Ala Gly Val Gln Thr Asp Leu Val Val Arg Gly Asn Cys Ser
 565 570 575
 Leu Val Thr Gly Ile Pro Gly Val Ser Asp Asn Ile Arg Ile Asn Gly
 580 585 590
 Ile Ile Asp Arg Tyr Leu Glu His Pro Arg Ile Phe Ile Phe Ala Asn
 595 600 605
 Gly Gly Glu Glu Lys Tyr Tyr Ile Gly Ser Ala Asp Trp Met Pro Arg
 610 615 620
 Asn Leu Asp Asn Arg Ile Glu Val Leu Thr Pro Val Tyr Asp Lys Val
 625 630 635 640
 Ile Gln Ala Glu Leu Lys Arg Val Val Cys Tyr Gly Leu Arg Asp Thr
 645 650 655
 Ala Lys Gly Arg Ile Val Asp Gly Ser Gly Glu Asn Lys Thr Trp Glu
 660 665 670
 Asn Ser Asp Ala Pro Phe Arg Ser Gln Glu Glu Leu Tyr Lys Tyr Tyr
 675 680 685
 Lys Glu Ser Glu
 690

<210> 7305
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 7305
 Asn Thr Thr Arg Thr Ser Trp Gln Phe Arg Leu Arg Ser Leu Arg Ala
 1 5 10 15
 Arg Ser Thr Ser Ile Thr Cys Ser Ala Phe Ser Phe Gly Ser Ala Lys
 20 25 30
 Arg Ala Ser Val Ser Ser Leu Ser Leu Met Val Ser Pro Val Arg Arg
 35 40 45
 Val Val Pro Ala Ile Gly Ser Ile Tyr Ala Cys Pro Leu Ser Thr Leu
 50 55 60
 Gln Cys Val Ser Gly Asp Glu Pro Lys Met Arg
 65 70 75

<210> 7306
 <211> 547
 <212> PRT
 <213> B.fragilis

<400> 7306
 Phe Phe Leu Arg Ala Glu Arg Cys Ile Ala Val Phe Pro Ser Leu Val
 1 5 10 15
 Leu Ala Ala Ser Val His Asp Ser Pro Phe Gly Arg Val Ala Lys Ser
 20 25 30
 Val Ala Asp His Thr Phe Gln Phe Cys Leu Tyr His Phe Val Val Tyr
 35 40 45
 Arg Arg Lys His Phe Asp Ala Val Val Gln Ile Ala Gly His Pro Val
 50 55 60
 Gly Arg Ser Tyr Ile Val Phe Phe Phe Pro Ser Val Gly Glu Asp Glu
 65 70 75 80
 Asp Ala Arg Met Phe Gln Ile Thr Val Asp Asp Ala Val Asp Pro Asp
 85 90 95

Val Val Ala Asp Ser Arg Asp Ala Gly His Gln Gly Ala Val Ala Pro
 100 105 110
 Asp His Gln Val Cys Leu Tyr Thr Gly Cys Arg Ser Phe Val Glu Phe
 115 120 125
 Leu Tyr Gln Tyr Pro Val Gly Asn Met Val His Phe Gly Lys Asp Val
 130 135 140
 Cys Leu Phe Ser Leu Ser Leu Val Leu Asp Phe Leu Val Asp Gln Gly
 145 150 155 160
 Cys Gln Pro Phe Ala His Ile Val Gly Arg His Glu Gln Phe Leu Glu
 165 170 175
 Val His Arg Glu Val Gly Leu Leu Tyr Glu Val Glu Tyr Pro Val Tyr
 180 185 190
 Phe Pro His Asn Gly Ala Met Cys Cys His Asp Gly Glu Ile Gly Ile
 195 200 205
 His Pro Cys Val Ser Phe Met Lys Ile Ser Gly Ala Asp Thr Gly Gln
 210 215 220
 Val Ala Lys Pro Cys Ser Asp Met Tyr Gln Leu Gly Val Asp Phe Gln
 225 230 235 240
 Thr Phe His Ser Glu Tyr His Phe Asp Ser Cys Leu Leu His Ala Phe
 245 250 255
 Ala Pro Ala Asp Val Gly Arg Phe Val Glu Thr Gly Glu Gln Phe Asp
 260 265 270
 Asp Asn Arg Tyr Phe Phe Ser Val Leu Cys Gly Ala Asp Gln Ser Phe
 275 280 285
 His Tyr Leu Arg Val Phe Gly Gln Ala Ile Glu Ser His Leu Asp Ala
 290 295 300
 Phe His Phe Phe Ala Asp Gly Cys Leu Ala Gln Tyr Thr Asp His Gly
 305 310 315 320
 Ile Glu Arg Leu Ile Gly Val Met Gln Arg Pro Val Leu Phe Pro Asp
 325 330 335
 Gln Ser Gln Asp Thr Phe Arg Pro Val Gln Phe Leu Phe Glu Asp Gly
 340 345 350
 Arg Pro Gly Arg Ile Phe Gln Val Gly Pro Ser Ala Val Gly Lys Leu
 355 360 365
 His Gln Val Phe Glu Val Met Ile Ala Pro Ala Cys Tyr Thr Gly Val
 370 375 380
 Val Phe Ile His Val Glu Ala Val Gly Gln Leu Ser Gln Gln Ile Phe
 385 390 395 400
 Arg His Leu Phe Val Ile Asp Glu Thr Asp Arg Phe Ala Pro Phe Pro
 405 410 415
 Ala Phe Asp Pro Leu Arg Tyr Phe Leu Glu His Thr Cys Thr Gln Ile
 420 425 430
 Thr Val Tyr Leu His Phe Gly Val Phe Gly Glu Leu Glu Ser Val Ser
 435 440 445
 Phe Ile Val Arg Ile Ile His Ala Tyr Glu Asp His Arg Gln Ala Val
 450 455 460
 Ala Asp Asn Val Val Gln Lys His Gln Ile Gly Phe Ala Phe Arg Ile
 465 470 475 480
 Arg Gln Ala Asp Glu Ala Ser Glu Leu Gly Gly Gly Glu Pro Asp Asp
 485 490 495
 Gly Ile Ile Phe His Phe His Phe Ser Leu Thr Val Phe Ala Gln Gln
 500 505 510
 Ala Asp Gly Lys Val Asp Val Phe Ile Gly Leu Val Val Arg Met Thr
 515 520 525
 Gly Arg Phe Ser Lys Lys Glu Arg Ile Gly Arg Pro Ile Gln Pro Val
 530 535 540
 Pro Val Glu
 545

<210> 7307
 <211> 342
 <212> PRT
 <213> B.fragilis

<400> 7307

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Pro Arg Met Arg Asn Ile Glu Lys Thr Asn Tyr Met Lys Gln Ile Leu
1      5      10      15
Tyr Lys Leu Phe Glu His Gln Tyr Leu Gly Arg Asp Glu Ala Arg Thr
      20      25      30
Ile Leu Gln Asn Ile Ala Gln Gly Lys Tyr Asn Asp Ala Gln Val Ala
      35      40      45
Ser Leu Ile Thr Val Phe Leu Met Arg Asn Ile Ser Val Glu Glu Leu
      50      55      60
Cys Gly Phe Arg Asp Ala Leu Leu Glu Met Arg Val Pro Val Asp Leu
      65      70      75      80
Ser Glu Phe Ala Pro Ile Asp Ile Val Gly Thr Gly Gly Asp Gly Lys
      85      90      95
Asn Thr Phe Asn Ile Ser Thr Ala Ala Cys Phe Thr Val Ala Gly Ala
      100     105     110
Gly Phe Pro Val Val Lys His Gly Asn Tyr Gly Ala Thr Ser Val Ser
      115     120     125
Gly Ala Ser Asn Val Met Glu Gln His Gly Val Lys Phe Thr Asp His
      130     135     140
Thr Asp Arg Leu Arg Arg Ser Met Glu Lys Cys Asn Ile Ala Tyr Leu
      145     150     155     160
His Ala Pro Leu Phe Asn Pro Ala Leu Lys Ala Val Ala Pro Ile Arg
      165     170     175
Lys Ala Leu Ala Val Arg Thr Phe Phe Asn Met Leu Gly Pro Leu Val
      180     185     190
Asn Pro Val Ile Pro Thr Tyr Gln Leu Leu Gly Val Tyr Asn Leu Pro
      195     200     205
Leu Leu Arg Leu Tyr Thr Tyr Thr Tyr Gln Glu Ser Ala Thr Arg Phe
      210     215     220
Ala Val Val His Ser Leu Asp Gly Tyr Asp Glu Ile Ser Leu Thr Asp
      225     230     235     240
Glu Phe Lys Val Ala Thr Cys Gly Asn Glu Lys Ile Tyr Thr Pro Glu
      245     250     255
Ser Leu Gly Phe Asn Arg Cys Arg Glu Ser Glu Leu Asp Gly Gly Asn
      260     265     270
Thr Pro Glu Asp Ala Ala Arg Ile Phe Asp Ala Val Met Glu Gly Thr
      275     280     285
Ala Thr Glu Ala Gln Lys Asn Val Val Ile Val Asn Ala Ala Phe Ala
      290     295     300
Ile Arg Val Ile Cys Pro Glu Lys Pro Ile Glu Glu Cys Ile Ala Leu
      305     310     315     320
Ala Arg Glu Ser Leu Glu Ser Gly Lys Ala Arg Glu Thr Leu Lys Lys
      325     330     335
Phe Val Glu Leu Asn Gly
      340

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<210> 7308
 <211> 151
 <212> PRT
 <213> B.fragilis

<400> 7308

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Asn Lys Asn Arg Ile Ala Val Met Lys Ser Met Lys Phe Ile Gly Cys
1      5      10      15

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Leu Tyr Leu Leu Ala Leu Leu Ser Ala Cys Gly Ser Arg Thr Ser Asp
 20 25 30
 Tyr Asp Ala Thr Gly Thr Phe Glu Ala Thr Glu Val Leu Val Ser Ala
 35 40 45
 Glu Ala Ser Gly Lys Leu Leu Tyr Phe His Val Glu Glu Gly Thr Arg
 50 55 60
 Leu Lys Ala Gly Glu Glu Val Gly Leu Ile Asp Thr Leu Gln Leu Tyr
 65 70 75 80
 Leu Lys Lys Leu Gln Leu Gln Ala Ser Met Lys Ser Val Glu Ser Gln
 85 90 95
 Arg Pro Asp Val Asn Lys Gln Ile Ala Ala Thr Arg Gln Gln Ile Ala
 100 105 110
 Thr Ala Arg Arg Glu Lys Arg Arg Val Glu Asn Leu Leu Lys Ala Gly
 115 120 125
 Ala Ala Asn Gln Lys Gln Leu Asp Asp Trp Gly Leu His His Gly Gly
 130 135 140
 Gly Arg Tyr Arg Val His Gly
 145 150

<210> 7309

<211> 64

<212> PRT

<213> B.fragilis

<400> 7309

Met Tyr Arg Leu Leu Ile His Ile Arg Glu Ser His Arg Glu Phe Arg
 1 5 10 15
 Gln Gln Phe Ile Ala Gly Gly Ile Val Ser Glu Lys Ser Ile Tyr Thr
 20 25 30
 Gly Met Glu Glu Ile Glu Ile Ala Thr Val Pro Ile Arg Glu Asn Leu
 35 40 45
 Ser Val Glu Val His His Leu Arg Cys Gly Ser Cys Arg Asn Leu Val
 50 55 60

<210> 7310

<211> 303

<212> PRT

<213> B.fragilis

<400> 7310

Ile Asp Ile Arg His Ala Phe Tyr Lys Asn Lys Ser Gln Lys Asp Ile
 1 5 10 15
 Ser Leu Cys Ser Asn Asn Ala Lys Gly Tyr Ile Asn Gln Pro Ile Leu
 20 25 30
 Ile Lys Met Ala Arg Ala Ile Gln Phe Thr Lys Met His Gly Thr Gly
 35 40 45
 Asn Asp Tyr Ile Tyr Val Asn Thr Leu Arg Phe Pro Ile Ala Arg Pro
 50 55 60
 Glu Lys Ala Ala Ile Glu Trp Ser Ala Tyr His Thr Gly Ile Gly Ser
 65 70 75 80
 Asp Gly Leu Val Leu Ile Gly His Ser Asp Lys Ala Asp Phe Ser Met
 85 90 95
 Arg Ile Phe Asn Ala Asp Gly Ser Glu Ala Met Met Cys Gly Asn Ala
 100 105 110
 Ser Arg Cys Ile Gly Lys Tyr Leu Tyr Glu Tyr Gly Leu Thr Ser Lys
 115 120 125
 Asn Val Ile Thr Leu Asp Thr Leu Ser Gly Ile Lys Ile Leu Glu Leu
 130 135 140
 His Leu Glu Gly Arg Thr Val Glu Thr Val Thr Val Asp Met Gly Ile

[illegible]

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<210> 7313
 <211> 92
 <212> PRT
 <213> B.fragilis

<400> 7313

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Thr Gly Cys Gly Thr Arg Arg Gln Cys Thr Lys Phe Asn Gly Thr Ser
1      5      10      15
Tyr Ile Thr Gln Arg Ala Ala Glu Ala Ile Tyr Thr Pro Glu Gly Lys
      20      25      30
Glu Gln Ile Gln Glu Thr Ile Asn Tyr Tyr Met Thr Asn Ala Arg Ile
      35      40      45
Met Lys Glu Gly Leu Glu Ser Thr Gly Leu Lys Val Tyr Gly Gly Val
      50      55      60
Asn Ala Pro Tyr Leu Trp Val Lys Asn Ser Lys Thr Glu Gln Ala Arg
65      70      75      80
Gly Ala Ser Leu Thr Arg Cys Tyr Thr Lys Thr Thr
      85      90

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<210> 7314
 <211> 210
 <212> PRT
 <213> B.fragilis

<400> 7314

```

Asn Trp Lys Gly Gly Cys Glu Lys Met Lys Asn Asn Glu Ser Ile Arg
1      5      10      15
Ile Ala Val Ala Glu Thr Ser Val Ile Ile Arg Ser Gly Leu Thr Leu
      20      25      30
Ala Leu Lys Arg Leu Pro Asn Leu Lys Ile Gln Pro Val Glu Leu Leu
      35      40      45
Ser Val Glu Ala Leu Asn Asp Cys Leu Arg Thr Gln Phe Pro Asp Ile
      50      55      60
Leu Val Val Asn Pro Thr Phe Gly Asp Phe Phe Asp Val Ala Arg Phe
65      70      75      80
Arg Glu Glu Thr Ala Gly Lys Gly Ile Arg Val Val Ala Leu Val Ser
      85      90      95
Ser Phe Ile Asp Ala Ser Leu Leu Ser Lys Tyr Asp Ala Ser Phe Ser
      100      105      110
Ile Phe Asp Asp Leu Glu Ala Leu Ala Asn Lys Ile Asn Leu Leu Gln
      115      120      125
Asn Ile Glu Pro Glu Glu Glu Asp Ser Gln Glu Asn Leu Ser Gln
      130      135      140
Arg Glu Lys Glu Ile Val Ile Cys Val Val Lys Gly Met Thr Asn Lys
145      150      155      160
Glu Ile Ala Glu Lys Leu Phe Leu Ser Ile His Thr Val Ile Thr His
      165      170      175
Arg Arg Asn Ile Ser Lys Lys Leu Gln Ile His Ser Ala Ala Gly Leu
      180      185      190
Thr Ile Tyr Ala Ile Val Asn Lys Leu Val Glu Leu Ser Asp Val Lys
      195      200      205
Asp Leu
      210

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<210> 7315
 <211> 378
 <212> PRT
 <213> B.fragilis

<400> 7315

Asn Asn His Ile Ser Val Phe Thr Thr Met Lys Thr His Lys Leu Leu
 1 5 10 15
 Phe Val Thr Leu Leu Gly Thr Val Cys Ile Ser Cys Gly His Pro Ser
 20 25 30
 His Lys Thr Gly Ser Glu Lys Glu Ala Leu Gly Lys Leu Leu Phe His
 35 40 45
 Asp Thr Ser Leu Ser Glu Pro Pro Gly Gln Ser Cys Ala Thr Cys His
 50 55 60
 Ala Ser Ser Lys Gly Phe Ala Asp Glu Gln Ala Arg Ala Ile Ser Glu
 65 70 75 80
 Gly Ala Val Gln Gly Leu Phe Ser Gln Arg Asn Ser Met Ser Val Cys
 85 90 95
 Tyr Ala Ala Phe Val Pro Glu Leu His Tyr Asp Asp Asp Asp Glu Asn
 100 105 110
 Tyr Val Gly Gly Leu Phe Trp Asp Gly Arg Ser Pro Ser Leu Gln Asp
 115 120 125
 Gln Ala Gly Ile Pro Leu Leu Asn Pro Val Glu Met Gly Asn Arg Asp
 130 135 140
 Lys Gln Met Val Ala Glu Lys Val Lys Arg Thr Pro Tyr Tyr Asp Arg
 145 150 155 160
 Ile Val Gln Ile Tyr Gly Glu Thr Glu His Ala Asp Ser Leu Phe Ala
 165 170 175
 His Val Thr Asp Ala Leu Ala Ala Tyr Gln Ala Ser Lys Glu Ile Asn
 180 185 190
 Pro Phe Thr Ser Lys Tyr Asp Ala Tyr Lys Lys Gly Asn Tyr Gln Leu
 195 200 205
 Thr Glu Gln Glu Ala Arg Gly Lys Glu Leu Phe Lys Asp Lys Gly Gln
 210 215 220
 Cys Ala Glu Cys His Ile Leu Asp Arg Asp Lys Arg Ala His Arg Thr
 225 230 235 240
 Leu Phe Thr Asp His Thr Tyr Asp Asn Leu Gly Ile Pro Lys Leu Pro
 245 250 255
 Asp His Pro His Tyr Lys Val Ala Ala Glu Tyr Phe Leu Leu Ala Ala
 260 265 270
 Asp Ser Val Asp Leu Gly Leu Gly Ala Ile Val Asn Ala Glu Ser Glu
 275 280 285
 Asn Gly Lys Phe Arg Val Pro Thr Leu Arg Asn Val Glu Leu Thr Ala
 290 295 300
 Pro Tyr Gly His Asn Gly Tyr Phe Lys Thr Leu Glu Glu Ile Val His
 305 310 315 320
 Phe Tyr Asn Val Arg Asp Val Ser Asp Glu Phe Pro Pro Ala Glu Tyr
 325 330 335
 Pro Ala Thr Val Asn Lys Glu Glu Leu Gly Asn Leu Gly Leu Thr Gln
 340 345 350
 Glu Glu Glu Ala Asp Ile Val Ala Phe Met Lys Thr Leu Thr Asp Gly
 355 360 365
 Tyr Met Lys Val His Lys Ser Glu Lys Arg
 370 375

<210> 7316

<211> 143

<212> PRT

<213> B.fragilis

<400> 7316

Ala Tyr Ser Ile His Ile Lys Arg Thr Asn Ser Lys Thr Asn Asn Ile
 1 5 10 15
 Thr Leu Thr Asn His Ile Met Arg Lys Leu Ile Leu Leu Val Asp Asp

	20		25		30										
Lys	Glu	Thr	Ile	Ala	Lys	Val	Ala	Ser	Ile	Tyr	Leu	Gly	Lys	Asp	Tyr
	35						40					45			
Asp	Ile	Gln	Tyr	Phe	Pro	Asp	Pro	Ile	His	Ala	Leu	Glu	Trp	Leu	His
	50					55					60				
Glu	Gly	Lys	Thr	Pro	Asp	Leu	Ile	Ile	Ser	Asp	Ile	Arg	Met	Pro	Leu
65					70				75					80	
Met	Arg	Gly	Asp	Glu	Phe	Leu	His	Tyr	Leu	Lys	Cys	Asn	Glu	Leu	Phe
			85					90					95		
Lys	Asp	Ile	Pro	Val	Ile	Met	Leu	Ser	Ser	Glu	Glu	Ser	Thr	Ser	Glu
	100						105						110		
Arg	Ile	Arg	Leu	Leu	Gln	Glu	Gly	Ala	Val	Asp	Tyr	Ile	Leu	Lys	Pro
	115					120						125			
Phe	Asn	Pro	Met	Glu	Leu	Lys	Ile	Arg	Val	Lys	Lys	Ile	Ile	Glu	
	130					135					140				

<210> 7317

<211> 134

<212> PRT

<213> B.fragilis

<400> 7317

Lys	Lys	Asn	Val	Ser	Thr	Asn	Leu	Lys	Thr	Pro	Thr	Asn	Val	Met	Ala
1			5						10					15	
Ile	Glu	Arg	Lys	Val	Pro	Gly	Glu	Ile	Arg	Ile	Phe	Leu	Asn	His	Val
			20					25					30		
Tyr	Glu	Phe	Lys	Lys	Gly	Val	Arg	Asn	Met	Val	Leu	Tyr	Thr	Met	Asn
		35				40					45				
Lys	Glu	His	Glu	Ala	Phe	Ala	Ile	Arg	Arg	Leu	Glu	Arg	Gln	Asn	Ile
	50					55					60				
Ser	Tyr	Leu	Ile	Gln	Glu	Val	Asn	Ala	Asn	Lys	Ile	Asn	Leu	Phe	Phe
65				70					75					80	
Gly	Lys	Ala	Glu	Cys	Met	Asp	Ala	Ile	Arg	His	Ile	Ile	Ile	Arg	Pro
				85				90					95		
Leu	Asn	His	Leu	Thr	Pro	Glu	Glu	Asp	Phe	Ile	Leu	Gly	Ala	Met	Leu
			100				105						110		
Gly	Tyr	Asp	Ile	Cys	Gln	Gln	Cys	Lys	Arg	Tyr	Cys	Asn	Lys	Lys	Gly
	115					120						125			
Asn	Ile	Lys	Ile	Ala	Gly										
	130														

<210> 7318

<211> 321

<212> PRT

<213> B.fragilis

<400> 7318

Asn	Met	Leu	Phe	Phe	Ile	Ser	Asp	Leu	Leu	Ile	Asn	Arg	Ile	Phe	Tyr
1				5					10					15	
Leu	Ser	Leu	Pro	Cys	Asp	Lys	Asn	Arg	Phe	Met	Glu	Lys	Ile	Lys	Pro
		20					25						30		
Leu	Glu	Leu	Ala	Leu	Asp	Leu	Leu	Lys	His	Ser	Asn	Ile	Val	Arg	Asn
		35				40					45				
Asn	Glu	Tyr	Arg	Phe	Val	Thr	Pro	Asp	Phe	Gly	Ile	Val	Ile	Ser	Phe
	50					55					60				
Thr	His	Met	Glu	Ser	Arg	Leu	Phe	Arg	Leu	Gly	Gln	Pro	Tyr	Arg	Leu
65				70					75					80	
Lys	Glu	Gly	Arg	Ile	Ile	Arg	Gly	Leu	Arg	Gly	Lys	Ala	Arg	Ile	Thr
				85				90						95	

Ile Asn Leu Ile Glu Tyr Asn Ile Tyr Pro Gln Thr Ile Ala Thr Phe
 100 105 110
 Leu Pro Gly Ser Ile Ile Glu Leu Leu Glu Phe Thr Pro Asp Cys Asp
 115 120 125
 Phe Gln Met Ile Ala Ala Asp Lys Asp Phe Leu Pro Leu Leu Arg Gly
 130 135 140
 Asp Gln Leu Phe Glu Ser His Thr Arg Gln Asn Leu Val Met Gln Val
 145 150 155 160
 Thr Asp Thr Glu Trp Lys Leu Ser Asp Ala Tyr Phe Thr Leu Ile Trp
 165 170 175
 Asp Thr Val Gln Glu Val Pro Phe Arg Arg Glu Val Val Gln Tyr Leu
 180 185 190
 Leu Ala Ala Leu Leu His Asn Ile Lys Tyr Ile Arg Thr Glu Glu Ala
 195 200 205
 Asn Asp Thr Ser Arg Arg Phe Ser His Gln Glu Glu Ile Phe Trp Arg
 210 215 220
 Phe Ile Ala Leu Val Asn Glu Phe Ser Lys Asn Glu Arg Thr Val Gly
 225 230 235 240
 Phe Tyr Ala Asp Lys Leu Cys Leu Thr Pro Arg Tyr Leu Asn Thr Leu
 245 250 255
 Ile Arg Gln Val Ser His Gln Thr Val Met Glu Trp Ile Asn Gln Ser
 260 265 270
 Val Ile Leu Glu Ala Lys Val Leu Leu Lys His Ser Asn Leu Leu Val
 275 280 285
 Tyr Gln Ile Ser Asp Glu Leu His Phe Pro Asn Pro Ser Phe Phe Cys
 290 295 300
 Lys Phe Phe Lys Arg Met Thr Gly Met Thr Pro Gln Glu Tyr Gln Lys
 305 310 315 320
 Arg

<210> 7319
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 7319
 Arg Ala Pro Pro Glu Met Arg Leu Trp Lys Leu Ser Ile Trp Glu Asp
 1 5 10 15
 Gly Tyr Thr Ile Pro Cys Val Cys Tyr Tyr Ile Glu Lys Glu Asp Val
 20 25 30
 Tyr Glu Leu Val Asp Gly Tyr His Arg Tyr Lys Val Met Met Thr Ser
 35 40 45
 Pro Arg Ile Tyr Lys Arg Glu Asn Gly Leu Leu Pro Val Thr Val Ile
 50 55 60
 Arg Lys Asp Leu Ala Glu Arg Met Ser Leu Tyr His Pro Ser
 65 70 75

<210> 7320
 <211> 122
 <212> PRT
 <213> B.fragilis

<400> 7320
 Cys Asn Ile Ala Pro Asn Thr Lys Ile Ser Gly Gly Lys Arg Ile Ser
 1 5 10 15
 Ser His Val Pro His Arg Arg Asn Asp Val Gly Leu Ile Phe Arg Ser
 20 25 30
 Val Ala Ser Ser Leu Ala Asn Ala Lys Asn Gln Leu Gly Asn Phe Tyr

35 40 45
 Arg Arg Ile Arg Ser Arg Ala Gly Gly Lys Ala Ala Val Ile Ala Thr
 50 55 60
 Ala His Lys Val Thr Glu Ile Phe Phe Ala Met Val Ala Asn Gln Thr
 65 70 75 80
 Pro Tyr Asn Pro Glu Lys Val Gly Ile Asp Glu Lys Val Leu Leu Glu
 85 90 95
 Lys Arg Ile Thr Arg Tyr Lys Arg Glu Leu Glu Arg Ile Thr Gly Met
 100 105 110
 His Ile Glu Ile Gly Asn Ala Cys Val Pro
 115 120

<210> 7321
 <211> 90
 <212> PRT
 <213> B.fragilis

<400> 7321
 Leu Pro Gly Tyr Ile Asp His Gly Gly Thr Gly Ile Gly Lys Pro Ser
 1 5 10 15
 Lys Leu Gln Gly Phe Lys Gln Leu Leu Leu Thr Asp Ile Met Gln Ala
 20 25 30
 Asn Gln Arg Leu Ala Ala Val Ile Leu Ala Asp Leu Pro Lys Pro Asp
 35 40 45
 Val Ile Leu Thr Leu Lys Glu Ala Ala Arg Ile Leu Ala Gly Gly Phe
 50 55 60
 Tyr Leu Val Gly Gly Lys Arg Asp Ile Ile His Arg Ala Val Ile Phe
 65 70 75 80
 Gly Thr His Ile Gly Thr Val Arg His Ile
 85 90

<210> 7322
 <211> 1045
 <212> PRT
 <213> B.fragilis

<400> 7322
 Val Asn Lys Tyr Phe Ser Leu Ile Thr Asn Gln Val Thr Tyr Leu Phe
 1 5 10 15
 Phe His Gly Met Glu Gln Ile Ser Glu Tyr Leu Phe Thr Thr Glu Glu
 20 25 30
 Gln Ala Val Ile Ala Arg Ser Lys Ala Glu Gly Ser Tyr Met Lys Ala
 35 40 45
 Pro Asn Gly Gln Ala Thr Asn Leu Asn Glu Lys Gln Trp Ala Gln Val
 50 55 60
 Arg Thr Arg Ala Phe Arg Asp Trp Phe Gly Asp Trp Glu Asn Cys Pro
 65 70 75 80
 Asp Glu Ala Ser Lys Val Arg Asp Ala Asn Gly Glu Pro Leu Val Val
 85 90 95
 Tyr His Gly Ser Arg Glu Asn Phe Tyr Glu Phe Lys Arg Trp Thr Asp
 100 105 110
 Gly Leu Ile Asn Ser Gly His Phe Phe Ser Pro Asp Arg Lys Asn Ala
 115 120 125
 Leu Gly Tyr Gly Gly Asn Ile Tyr Asp Val Tyr Leu Asn Leu Arg Asn
 130 135 140
 Pro Leu Glu Val Asp Ala Gln Gly Ala Asn Phe Ser Ser Ile Glu Tyr
 145 150 155 160
 Gly Gly Glu Lys Val Ala Ala Ser Asp Leu Gly Asn Leu Ala Glu Met
 165 170 175

Glu	Gly	Tyr	Asp	Gly	Val	Val	Ile	Ser	Asp	Val	Ala	Asp	Ser	Ala	Asp
			180					185					190		
Met	Gly	Ser	Glu	Asn	Asp	Arg	Thr	Val	Asp	Tyr	Ile	Ser	Phe	Ala	Ala
		195					200					205			
Asn	Gln	Ile	Lys	Ser	Ala	Ser	Gln	Asn	Thr	Gly	Ser	Phe	Leu	Glu	Ser
		210				215					220				
Gln	Asp	Asp	Ile	Arg	Phe	Arg	Glu	Ile	Ser	Gln	Asp	Asp	Gly	Gly	Lys
225					230					235					240
Ser	Leu	Val	Gly	Leu	His	Asn	Ile	Ser	Glu	Glu	Lys	Leu	Leu	Lys	Ala
				245					250					255	
Leu	Lys	Leu	Gly	Gly	Leu	Ala	Asn	Pro	Ser	Ala	Ala	Val	Ile	Asp	Ile
			260					265					270		
Ala	Arg	Gln	Ser	His	Glu	Glu	Tyr	Gly	Glu	Ile	Ser	Leu	Val	Leu	Pro
		275					280					285			
Ser	Ser	Met	Ile	Asp	Lys	Arg	Thr	Gly	Arg	Asn	Ala	Gly	Thr	Phe	Ser
		290				295					300				
Gly	Asp	Ala	Trp	Thr	Pro	Val	Tyr	Pro	Gln	Ile	Glu	Arg	Gln	Phe	Ser
305					310					315					320
Gly	Asp	Gly	Ser	Gly	Arg	Val	Arg	Asp	Ala	Ile	Ser	Arg	Leu	Pro	Gln
				325					330					335	
Glu	Met	Gln	Pro	Asp	Val	Arg	Ser	Ala	Trp	Asn	Asn	Tyr	Met	Asp	Gly
			340					345					350		
Arg	Asp	Glu	Gly	Ser	Ala	Phe	Ala	Tyr	Gln	Phe	Leu	Tyr	Glu	Arg	Gly
		355					360					365			
Glu	Ala	Pro	Glu	Phe	Arg	Lys	Val	Glu	Pro	Leu	Phe	Gly	Glu	His	Leu
		370				375					380				
Arg	Asn	Arg	Ile	Ser	Ala	Ile	Asp	Ala	Leu	Asp	Asn	Tyr	Asp	Glu	Arg
385					390					395					400
Asn	Thr	Ala	Leu	Leu	Glu	Val	Tyr	Ile	Glu	Glu	Asn	Phe	Gly	Gly	Asp
				405					410					415	
Gln	Thr	Lys	Phe	Lys	Asp	Tyr	Ile	Glu	Thr	Arg	Lys	Arg	Val	Leu	Gln
			420					425					430		
Asp	Lys	Ile	Gln	Ala	Phe	Pro	Glu	Gln	Lys	Gln	Lys	Gly	Leu	Ala	Tyr
		435					440					445			
Arg	Lys	Ala	Val	Gln	Lys	Leu	Asn	Asp	Ile	Glu	Glu	Arg	Gly	Tyr	Glu
		450				455					460				
Tyr	Ser	Ser	Val	Gln	Asp	Phe	Tyr	Asp	Arg	Val	Lys	Thr	Asp	Ile	Arg
465					470					475					480
Gln	Ala	Gly	Ser	Val	Asp	Thr	Tyr	His	Thr	Leu	Gln	Asp	Ala	Leu	Asp
				485					490					495	
Lys	Ile	Asn	Gly	Ser	Glu	Ala	Leu	Ser	Arg	Gln	Tyr	Ala	Glu	Trp	Lys
			500					505					510		
Glu	Ser	Leu	Ala	Asp	Lys	Tyr	Gly	Ile	Lys	Glu	Val	Leu	Phe	Lys	Gly
		515					520					525			
Tyr	Thr														

645 650 655
 Leu Lys Glu Met Val Asp Ala Ile Gln Asn Glu Cys Pro Ala Met Tyr
 660 665 670
 Phe Glu Thr Lys Phe Glu Arg Pro Val Tyr Leu Asn Glu Phe Val Ala
 675 680 685
 Ala Ile Val Pro Glu Asn Val Asn Glu Asp Val Ser Lys Ser Ile Arg
 690 695 700
 Glu Ser Gly Leu Gln Val Phe Val Tyr Lys Pro Lys Asp Glu Ser Ser
 705 710 715 720
 Arg Asn Glu Ala Val Lys Leu Ala Ser Glu Ile Lys Gly Val Arg Phe
 725 730 735
 Arg Leu Ala Gly Gly Thr Gly Ala Phe Thr Pro Ala Cys Thr Ala Ser
 740 745 750
 Gly Gln Val Phe Leu Ser Gly Asp Glu Arg Met Ala Glu Leu Ser Arg
 755 760 765
 His Ala Val Phe Leu Ala Arg Lys Gln His Ile Pro Val Asn Ile Ile
 770 775 780
 His Ser Ile Gly Glu Val Asp Ser Pro Lys Val Arg Ala Leu Ile Ala
 785 790 795 800
 Gly Gly Lys Asp Ile Arg Gly Trp Tyr Asp Ile Pro Ser Asp Arg Ile
 805 810 815
 Cys Leu Tyr Leu Pro Lys Ala Arg Gly Lys Glu Asp Ile Glu Arg Thr
 820 825 830
 Leu Leu His Glu Gly Val Gly His Tyr Gly Leu Arg Arg Leu Ala Gly
 835 840 845
 Arg Lys His Met Asp Ala Phe Leu Asp Asp Ile Phe Ala Gly Cys Gly
 850 855 860
 Glu Lys Val Arg Gly Glu Ile Ile Arg Leu Ala Gly Thr Gly Lys Met
 865 870 875 880
 Asp Ile Arg Thr Ala Thr Glu Glu Tyr Leu Ala Gln Met Ala Glu Ser
 885 890 895
 Gly Thr Asp Ala Arg Val Trp Asp Lys Ile Arg Leu Ala Phe Arg Asn
 900 905 910
 Leu Leu Arg Lys Leu Gly Phe Ser Ile Glu Val Asp Asp Arg Glu Leu
 915 920 925
 Lys Gly Leu Leu Ala Ala Ser Arg Glu Asn Leu Lys Arg Thr Ala Ala
 930 935 940
 Thr Arg Ile Pro Glu Lys Ile Gln Thr Pro Lys Gly Glu Leu Glu Leu
 945 950 955 960
 Thr Pro Gly Tyr Ala Ala Gly Ser Leu Arg Ser Lys Asp Gly Val Arg
 965 970 975
 Asp Val Thr Pro Phe Leu Lys Glu Met Lys Arg Ala Gly Leu Lys Pro
 980 985 990
 Ala Ser Leu Ser Pro Glu Glu Trp Lys Ser Leu Phe Ser Gly Lys Gly
 995 1000 1005
 Ile Ala Leu Pro Asp Gly Arg Met Leu Met Ala Val Lys Glu Pro Ala
 1010 1015 1020
 Gly Tyr Gly Leu Lys Ile Thr Ala Pro Ala Leu Arg Ser Ile Lys Thr
 1025 1030 1035 1040
 Ala Glu Met Glu Ile
 1045

<210> 7323

<211> 126

<212> PRT

<213> B.fragilis

<400> 7323

Arg Ile Met Gln Val Cys Val Pro Met Asp Arg Ala Lys Asp Asn Asn

```

1           5           10           15
Arg Ala Phe Gly Ala Tyr Thr Ser Asp Leu His Ala Ile Leu Glu Trp
                20                25                30
Val Arg Glu Cys Gly Ile Lys Thr Val Ala Met Glu Ser Thr Gly Val
                35                40                45
Tyr Trp Ile Pro Leu Phe Cys Arg Leu Gln Asp Asp Gly Leu Asp Val
                50                55                60
Val Leu Thr Asn Ala Arg Asp Ile Lys Asn Ile Thr Glu Arg Lys Thr
        65                70                75                80
Asp Glu Ser Asp Ala Glu Trp Leu Leu Leu His Gln Tyr Gly Leu
                85                90                95
Leu Lys Thr Ser Phe Gln Leu His Asn Asp Ala Lys Arg Met Arg Thr
                100                105                110
Leu Thr Arg His Arg Asp Thr Leu Ser Arg Glu Pro Gln Ala
                115                120                125

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<210> 7324

<211> 140

<212> PRT

<213> B.fragilis

<400> 7324

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Pro Gln Thr Asn His Val Met Leu Asn Glu Asn Asn Arg Ser Ser Asp
1           5           10           15
Arg Ile Leu Thr Glu Arg Ile Leu Asp Asp Pro Asp Met Ile Leu Lys
                20                25                30
Ile Glu Asn Pro Ser Leu Lys Gln Gln Met Ala Ala Val Gln Lys Lys
                35                40                45
Pro Glu Leu Ile Ala Ser Leu Pro Leu Ala Gly Glu Lys Val Gln Leu
        50                55                60
Ala Ala Val Ile Ala Cys Pro Glu Ser Ile Leu Leu Val Asp Thr Pro
        65                70                75                80
Ala Pro Ala Ala Cys Phe Met Ala Val Glu Arg Met Leu Lys Glu Glu
                85                90                95
Leu Leu Pro Val Pro Gly Val Leu Asn Ala Ala Arg Glu Leu Ile Leu
                100                105                110
Gln Met Lys Lys Asp Lys Ala Asp Gly Arg Ser Ser Gly Ala Ala Ile
                115                120                125
Glu Lys Phe Leu Asp Glu Val Lys Pro Ile Lys Asn
        130                135                140

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<210> 7325

<211> 155

<212> PRT

<213> B.fragilis

<400> 7325

```

Ile Arg Thr Asn Tyr Arg Asp Ala Tyr Arg Asn Trp Gln Cys Met Cys
1           5           10           15
Ser Ile Glu Ala Ile Glu Ala Val Lys Arg Cys Arg Gln Ala Gly Phe
                20                25                30
Gln Asn Ile Ser Ile Asp Leu Ile Tyr Gly Leu Pro Gly Glu Thr Asp
                35                40                45
Gln Arg Trp Ala Gln Asp Leu Gln Gln Thr Val Ser Leu Asn Val Glu
        50                55                60
His Ile Ser Ala Tyr His Pro Ile Tyr Glu Glu Gly Thr Pro Leu Tyr
        65                70                75                80
Lys Met Leu Gln Gln His Ser Val Phe Gln Val Asp Glu Asp Ser Ser
                85                90                95

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Leu Asn Phe Phe Ser Thr Leu Ile Asp Thr Leu Ser Ala Ala Gly Tyr
 100 105 110
 Glu His Tyr Glu Ile Ser Asn Phe Cys Lys Pro Arg Met Tyr Ser Arg
 115 120 125
 Tyr Asn Thr Ser Tyr Arg Gln Gly Ile Pro Tyr Leu Gly Cys Gly Pro
 130 135 140
 Ser Ala His Ser Phe Asp Gly Asp Ser Arg Glu
 145 150 155

<210> 7326

<211> 84

<212> PRT

<213> B.fragilis

<400> 7326

Lys Met Pro Glu Pro Ile Arg Pro Asp Thr Lys Asn Gly Lys Val Leu
 1 5 10 15
 Asn Leu Leu Pro Asn Val Ile Phe Tyr Gly Ile Phe Leu Leu Phe Tyr
 20 25 30
 Asn Ser Arg Ser Phe Phe Gln Thr Val Val Asp Pro Arg Leu Asn His
 35 40 45
 Ile Leu Tyr Lys Asn Val Ile Tyr Ile Val Ile Arg Lys Asn Phe Val
 50 55 60
 Ser Ala Pro Asn Asp Trp His Arg Asn Ser Phe Asn Cys Gln Pro Leu
 65 70 75 80
 Asp Ile Thr Glu

<210> 7327

<211> 536

<212> PRT

<213> B.fragilis

<400> 7327

Ile Val Met Glu Asn Leu Ile Pro Tyr Ile Lys Leu Ile Ile Leu Ala
 1 5 10 15
 Leu Ala Cys Leu Val Thr Gly Val Cys Thr Leu Ser Arg Lys Trp Tyr
 20 25 30
 Val Asn Leu Ala Val Phe Leu Ile Cys Ile Ala Gly Glu Thr Phe Met
 35 40 45
 Ala Tyr Leu Phe Phe Pro Ala Tyr Ala Leu Trp Pro Ala Cys Gly Ser
 50 55 60
 Val Ala Ile Phe Ala Phe Ser Thr Ala Trp Glu His Leu Lys Pro Ser
 65 70 75 80
 Gly Arg Lys Glu Asn Lys Ser Pro Ile Arg Leu Pro Val Ile Ser Gly
 85 90 95
 Val Pro Tyr Arg His Leu Glu Phe Tyr Tyr Tyr Tyr Ser Asn Phe Leu
 100 105 110
 Val Tyr Gly Gly Ala Gly Ser Gly Lys Thr Lys Ser Ile Gly Lys Trp
 115 120 125
 Leu Leu Glu Glu Tyr Ile Lys Leu Gly Phe Ala Gly Phe Ile Tyr Asp
 130 135 140
 Phe Lys Asp Val Asp Tyr Thr Gln Thr Ala Tyr Asn Leu Thr Lys Lys
 145 150 155 160
 Tyr Gly Tyr Pro His Lys Phe Tyr Tyr Val Ser Phe Asp Lys Pro Glu
 165 170 175
 Arg Ser Tyr Arg Phe Asn Pro Leu Lys Val Val Lys Asp Arg Thr Glu
 180 185 190
 Leu Met Gln Leu Met Glu Asp Val Leu Leu Ala Leu Leu Pro Lys Gly

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<210> 7328
<211> 229
<212> PRT
<213> B.fragilis
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Leu	Arg	Met	Asp	Thr	Glu	Arg	Asn	Met	Gln	Ser	Asp	Cys	Tyr	Phe	Cys
1				5					10					15	
Lys	Lys	Asn	Tyr	Phe	Cys	Glu	Leu	Phe	Ile	Leu	Lys	Ile	His	Arg	Met
			20					25					30		
Ser	Thr	His	Gly	Ser	Leu	Ser	Glu	Val	Glu	Arg	Phe	Asn	Leu	Leu	Tyr
		35					40					45			
Lys	Ser	Ser	Phe	Asn	Lys	Val	Cys	Asn	Phe	Ala	Cys	Phe	Tyr	Val	Arg
	50					55					60				
Asn	Lys	Gln	Ala	Ser	Glu	Asp	Ile	Thr	Met	Asp	Ala	Phe	Leu	Gln	Leu

65		70		75		80									
Leu	Glu	Thr	Met	Lys	Val	Glu	Ser	Val	Asp	Asn	Pro	Met	Ala	Leu	Leu
			85						90					95	
Ile	Thr	Ile	Val	Lys	His	Lys	Ser	Leu	Asp	Tyr	Leu	Lys	Thr	Gln	Val
			100					105					110		
Arg	Arg	Glu	Asp	Thr	Lys	Asp	Asp	Leu	Ile	Gln	Trp	Lys	Gln	Arg	Glu
		115					120					125			
Leu	Ala	Ile	Arg	Ile	Ser	Asn	Leu	Glu	Gly	Cys	Asn	Pro	Ser	Tyr	Ile
		130				135					140				
Phe	Ser	Gln	Glu	Ile	Lys	Ser	Ile	Val	Met	Lys	Thr	Leu	Asn	Gln	Leu
145					150					155					160
Ser	Glu	Gln	Thr	Lys	Lys	Val	Phe	Ile	Met	Ser	Arg	Phe	Glu	Asn	Lys
				165					170					175	
Ser	Gly	Lys	Glu	Ile	Ala	Gln	Thr	Leu	Gly	Ile	Ser	Val	Lys	Gly	Val
			180					185					190		
Asp	Tyr	His	Met	Asn	Lys	Ala	Leu	Lys	Glu	Leu	Arg	Ala	Ala	Leu	Lys
		195					200					205			
Asp	Tyr	Leu	Pro	Ile	Leu	Thr	Trp	Leu	Cys	Phe	Met	Asn	Pro	Ile	Asn
	210					215					220				
Lys	Gly	Trp	Ile	Ser											
225															

<210> 7329

<211> 157

<212> PRT

<213> B.fragilis

<400> 7329

Ile	Ser	Thr	Ser	Ile	Cys	Met	Lys	Cys	Met	Pro	Met	Lys	Leu	Lys	Val
1				5					10					15	
Arg	Ile	Phe	Glu	Gly	Lys	Ser	Pro	Glu	Leu	Tyr	Leu	Ala	Val	Gly	His
			20					25					30		
Phe	Val	Leu	Ser	Pro	Ala	Cys	Leu	Arg	Glu	Asn	Asn	Asn	Tyr	Pro	Tyr
		35					40				45				
Lys	Ser	Ser	Arg	Met	Phe	Thr	Trp	His	Val	Leu	Tyr	His	Glu	Gly	Gln
	50					55					60				
Val	Val	Ala	Phe	Met	Pro	Val	Glu	Arg	Lys	Leu	Asp	Gly	Gly	Tyr	Lys
65					70					75					80
Ile	Asp	Asn	Tyr	Tyr	Ala	Thr	Pro	Asp	Arg	Glu	Arg	Gly	Asn	Gln	Leu
			85					90						95	
Leu	Lys	Leu	Leu	Lys	Ser	Val	Ile	Lys	Glu	Ser	Gly	Asp	Glu	Thr	Ser
			100					105					110		
Pro	Leu	Arg	Ala	Thr	Val	Gln	Lys	Arg	Asp	Val	Gly	Ile	Phe	Lys	Tyr
		115					120					125			
Met	Asn	Phe	Ile	Thr	Ile	Arg	Glu	Thr	Lys	Leu	Tyr	Val	Met	Met	Glu
	130					135					140				
Leu	Val	Arg	Met	Gly	Ser	Asp	Ser	Gly	Lys	Gln	Asp	Gly			
145					150					155					

<210> 7330

<211> 102

<212> PRT

<213> B.fragilis

<400> 7330

Val	Leu	Met	Arg	Ser	Leu	Asp	Arg	Gly	Gly	Thr	Ser	Ile	Pro	Gln	Lys
1				5					10					15	
Gly	Glu	Ala	Tyr	Asp	Leu	Asn	Gly	Asp	Gly	Val	Lys	Asp	Val	Ala	Val
			20					25					30		

Val Asp Lys Glu Pro Pro Ala Gly Glu Lys Ile Lys Gly Val Gln Tyr
 35 40 45
 Val Val Ile Gly Lys Thr Asn Arg Leu Ser Glu Gly Asp His Gly Tyr
 50 55 60
 Ile Glu Phe Gly Phe Asn Gln Gly Arg Lys Trp Asp Asp Lys Lys Tyr
 65 70 75 80
 Leu Arg Pro Ile Pro Leu Thr Ala Thr Gln Ile Asn Pro Ala Leu Leu
 85 90 95
 Pro Gln Asn Pro Gly Trp
 100

<210> 7331
 <211> 423
 <212> PRT
 <213> B.fragilis

<400> 7331

Lys Arg Met Gly Gly Thr Arg Met Asn Val Tyr Gln Ala Leu Arg Glu
 1 5 10 15
 Arg Ile Arg Arg Ile Phe Gly Glu Tyr Asp Tyr Val Tyr Leu Ser Phe
 20 25 30
 Ser Gly Gly Lys Asp Ser Gly Val Leu Leu Asn Ala Cys Val Glu His
 35 40 45
 Ile Lys Gln Tyr Gly Gly Arg Met Gly Val Phe His Met Asp Tyr Glu
 50 55 60
 Val Gln Tyr Ser Leu Thr Thr Lys Tyr Val Asp Glu Met Leu Ser Ser
 65 70 75 80
 Asn Arg Asp Ile Leu Asp Val Tyr Arg Cys Cys Val Pro Phe Lys Val
 85 90 95
 Gly Ser Ala Ala Ser Met Tyr Gln Arg Phe Trp Arg Pro Trp Asp Pro
 100 105 110
 Cys Val Arg Trp Val Arg Glu Met Pro Val Glu Tyr Leu Gly Thr Glu
 115 120 125
 Ala Phe Asp Phe Tyr Thr Pro Gln Met Trp Asp Tyr Glu Phe Gln Glu
 130 135 140
 Cys Phe Ser Phe Trp Leu Arg Lys Gln Leu Gly Val Gln Lys Val Ala
 145 150 155 160
 Cys Leu Val Gly Ile Arg Thr Gln Glu Ser Phe Asn Arg Trp Arg Thr
 165 170 175
 Ile Tyr Arg Ser Thr Pro Gly Pro Ser Ala Asp Trp Ile Cys Pro Val
 180 185 190
 Asp Glu Gly Ile Asp Asn Val Tyr Pro Leu Tyr Asp Trp His Thr Thr
 195 200 205
 Asp Ile Trp Thr Ala Asn Gly Arg Phe Arg Trp Lys Tyr Asn Arg Leu
 210 215 220
 Tyr Asp Leu Tyr Tyr Gln Ala Gly Val Pro Leu Asn Ser Gln Arg Val
 225 230 235 240
 Ala Ser Pro Phe Ile Ser Gln Ala Ile Pro Ser Leu His Leu Tyr Arg
 245 250 255
 Val Ile Glu Pro Glu Met Trp Gly Lys Met Leu Gly Arg Val Asn Gly
 260 265 270
 Val Asn Phe Ala Gly Val Tyr Gly Asn Ser Val Ala Met Gly Trp Arg
 275 280 285
 Gly Val Arg Leu Pro Glu Gly Met Thr Trp Lys Lys Tyr Leu Phe Phe
 290 295 300
 Leu Leu Asp Thr Leu Pro Glu Asp Ala Arg Asn Asn Tyr Leu Asp Lys
 305 310 315 320
 Leu Glu Val Ser Val Arg Phe Trp Arg Glu Lys Gly Gly Cys Leu Ala
 325 330 335

Lys Glu Thr Ile Met Lys Leu Lys Arg Leu Asn Ile Pro Phe Glu Leu
 340 345 350
 Gly Gly Thr Ser Gly Tyr Arg Thr His Lys Ala Pro Val Arg Met Glu
 355 360 365
 Tyr Leu Asp Asp Ile Asp Leu Pro Glu Phe Arg Asp Leu Pro Ser Tyr
 370 375 380
 Lys Arg Met Cys Ile Cys Ile Leu Lys Asn Asp His Cys Ala Asn His
 385 390 395 400
 Gly Leu Phe Thr Glu Gln Ser Gly Glu Arg Thr Pro Thr Pro Asp Asp
 405 410 415
 Gly Arg Val Arg Ile Leu Phe
 420

<210> 7332

<211> 296

<212> PRT

<213> B.fragilis

<400> 7332

Leu Asp Ala Ile Ser Leu Thr Glu His Ile Glu Tyr Arg Pro His Lys
 1 5 10 15
 Lys Asp Val Val Ala Asp His Asn Arg Ser Phe Asp Leu Cys Gln Lys
 20 25 30
 Gln Ala Glu Lys Leu Gly Ile Leu Ile Arg Gly Ser Glu Ile Thr
 35 40 45
 Arg Pro Met Ala Pro Gly His Phe Asn Ala Ile Phe Leu Ala Asp Ser
 50 55 60
 Asn Pro Leu Glu Gln Lys Glu Tyr Lys Asp Ala Phe Asn Glu Ala Lys
 65 70 75 80
 Arg Gln Gly Ala Phe Ile Phe Trp Asn His Pro Gly Trp Ala Ala Gln
 85 90 95
 Gln Pro Asp Thr Thr Lys Trp Trp Pro Glu His Thr Glu Leu Tyr Asn
 100 105 110
 Glu Gly Cys Met His Gly Ile Glu Val Ala Asn Gly Pro Leu Tyr Met
 115 120 125
 Pro Glu Ala Ile Gln Trp Cys Leu Asp Lys Asn Leu Thr Met Ile Gly
 130 135 140
 Thr Ser Asp Ile His Gln Pro Ile Gln Thr Asp Tyr Asp Phe Ser Lys
 145 150 155 160
 Asp Glu His Arg Thr Met Thr Phe Val Phe Ala Lys Glu Arg Ser Leu
 165 170 175
 Lys Gly Ile Arg Glu Ala Leu Glu Asn Arg Arg Thr Ala Ala Tyr Tyr
 180 185 190
 Arg Glu Leu Val Ile Gly Arg Glu Asp Leu Leu Arg Pro Phe Phe Glu
 195 200 205
 Lys Cys Val Glu Ile Glu Glu Ile Ser Arg Asn Glu Lys Gly Val Thr
 210 215 220
 Leu Ser Ile Thr Asn Thr Thr Asp Leu Val Leu Lys Leu Lys Lys Thr
 225 230 235 240
 Ala His Asp Thr Ser Leu Val Tyr Phe Arg Asp Met Thr Leu Lys Pro
 245 250 255
 His Thr Arg Tyr Ser Val Arg Ile Gly Phe Asp Asn Gly Ile Lys Gly
 260 265 270
 Gly Asp Met Asn Phe Glu Val Thr Asn Phe Ile Val Thr Pro Asp Lys
 275 280 285
 Gly Leu Glu Tyr Thr Ile Ser Leu
 290 295

<210> 7333

<400> 7333

<210> 7334

<211> 126

<212> PRT

<213> B.fragilis

<400> 7334

<210> 7335

<211> 69

<212> PRT

<213> B.fragilis

<400> 7335

Ala	Ser	Thr	Ile	Arg	His	Asn	Arg	Ala	Arg	Gly	Met	His	Lys	Ile	Glu
1				5					10					15	
Leu	Met	Thr	Arg	Leu	Val	Gly	Glu	Leu	Thr	Arg	Ser	Gly	Met	Ser	Asp
			20					25					30		
Ser	Trp	Ile	Arg	Arg	Asn	Leu	Gly	Met	Asp	Lys	Asp	Glu	Leu	Leu	Arg
		35					40					45			
Leu	Lys	Gln	Ile	Ser	Gly	Leu	Ala	Glu	Leu	Phe	Ala	Asp	Lys	Glu	Phe
	50					55				60					

Arg Met Ala Val Glu
65

<210> 7336
<211> 69
<212> PRT
<213> B.fragilis

<400> 7336

Ile	Asp	Asn	Met	Lys	Val	Lys	Lys	Val	Leu	Val	Cys	Thr	Phe	Leu	Leu
1				5					10					15	
Ala	Thr	Cys	Leu	Met	Asn	Ala	Gln	Ala	Gln	Arg	Arg	Asn	Glu	Ile	Leu
			20					25					30		
Val	Pro	Asp	Leu	Asp	Gly	Tyr	Thr	Thr	Leu	Lys	Cys	Asp	Phe	His	Met
		35				40						45			
His	Thr	Val	Phe	Ser	Asp	Gly	Leu	Val	Trp	Pro	Thr	Val	Arg	Val	Asp
	50					55					60				
Asp	Ala	Tyr	Arg	Glu											
65															

<210> 7337
<211> 439
<212> PRT
<213> B.fragilis

<400> 7337

Lys	Leu	Ile	Val	Met	Pro	Thr	Ile	Leu	Glu	Arg	Leu	Thr	Ala	Leu	Phe
1				5					10					15	
Ser	Arg	Asp	Met	Gln	Ala	Val	Leu	Arg	Asn	Pro	Arg	Ala	Ile	Ser	Met
			20					25					30		
Ile	Glu	Asn	Pro	Ser	Ile	Arg	Val	Gln	Met	Ala	Ala	Ile	Arg	Arg	Asp
		35				40						45			
Lys	Ser	Val	Ile	Cys	Phe	Ile	Asp	Lys	Pro	Val	Glu	Lys	Val	Gln	Leu
	50					55					60				
Ala	Ala	Val	Arg	Asn	Ala	Pro	His	Asn	Ile	His	Phe	Ile	Ala	Ser	Pro
65				70				75						80	
Gly	Glu	Lys	Val	Gln	Leu	Ser	Val	Ile	Arg	His	Lys	Pro	Gly	Tyr	Ile
			85					90					95		
Gly	Phe	Ile	Ser	Asn	Pro	Thr	Glu	Lys	Ala	Gln	Leu	Thr	Ala	Val	Glu
			100				105						110		
Arg	Arg	Pro	Glu	Cys	Ile	Ser	Leu	Ile	Asn	Lys	Pro	Ala	Val	Lys	Val
		115				120						125			
Gln	Leu	Met	Ala	Val	Leu	Lys	Asp	Pro	Ala	His	Ile	Ala	Ser	Ile	Lys
	130					135					140				
Glu	Pro	Ala	Glu	Lys	Val	Gln	Leu	Ala	Thr	Val	Gln	Lys	Asn	Pro	Glu
145				150					155					160	
Tyr	Ile	Arg	His	Ile	Glu	Ser	Pro	Thr	Val	Lys	Val	Gln	His	Met	Ala
			165					170						175	
Ile	Gln	Gly	Asn	Ala	Asp	Thr	Leu	Arg	His	Ile	Lys	Ser	Pro	Ala	Asp
		180				185						190			
Thr	Val	Gln	Leu	Ala	Ala	Val	Gln	Ala	Lys	Gly	Glu	Thr	Ile	Lys	Tyr
	195					200						205			
Val	Ser	Glu	Pro	Ser	Glu	Ala	Val	Gln	Leu	Ala	Ala	Val	Arg	Asn	Asn
	210				215						220				
Pro	Met	Asn	Ile	Arg	Tyr	Ile	Glu	Asn	Pro	Thr	Glu	Lys	Val	Gln	Leu
225				230					235					240	
Ser	Val	Leu	His	Ala	Asp	Arg	Glu	Ala	Ala	Ala	Leu	Ile	Ser	Ser	Pro
			245					250						255	
Ser	Glu	Ala	Val	Arg	Lys	Gln	Ala	Glu	Glu	Met	Tyr	Gly	Leu	Lys	Leu

260					265					270					
Glu	Lys	Pro	Ala	Asp	Arg	Glu	Ala	Glu	Pro	Ser	Ser	Glu	Ala	Thr	Glu
275					280					285					
Ser	Ser	Ala	Thr	Arg	Arg	Ala	Pro	Arg	Lys	Lys	Thr	Glu	Gln	Ser	Thr
290					295					300					
Gln	Ser	Thr	Arg	Lys	Pro	Ser	Ala	Arg	Gln	Val	Lys	Thr	Ala	Ile	Glu
305					310					315					
Lys	Leu	Asp	Lys	Asp	Leu	Arg	Glu	Ile	Gln	Glu	Ile	Pro	Gln	Val	Lys
325					330					335					
Asn	Arg	Asp	Lys	Lys	Leu	Ile	Lys	Ala	Phe	Glu	Glu	Phe	Asn	Ser	Ser
340					345					350					
Ala	Val	Pro	Glu	Lys	Lys	Gly	Cys	Asp	Val	Glu	Ser	Ile	Leu	Lys	Asp
355					360					365					
Leu	Arg	Gly	Lys	Gly	Val	Lys	Val	Glu	Ala	Met	Lys	Ala	Glu	Glu	Trp
370					375					380					
His	Ser	Leu	Met	Asn	Gly	Lys	Ala	Ile	Arg	Pro	Ser	Leu	Ile	Ser	Gly
385					390					395					
Ala	Ser	Lys	Pro	Ala	Ala	Lys	Gly	Ala	Pro	Phe	Met	Leu	Thr	Lys	Thr
405					410					415					
Pro	Val	Gly	Tyr	Ala	Val	Lys	Ala	Val	Asn	Thr	Val	Asn	Ser	Leu	Thr
420					425					430					
Arg	Gln	Ala	Ser	Ala	Asp	Met									
435															

<210> 7338

<211> 213

<212> PRT

<213> B.fragilis

<400> 7338

Ala	Ser	Ser	Val	Val	Leu	Arg	Met	Gln	Lys	Ala	Met	Gln	Gln	Met	Lys
1				5					10					15	
Ile	Lys	Leu	Thr	Leu	Val	Leu	Ser	Asp	Ile	Thr	Gly	Lys	Ser	Gly	Ile
			20					25					30		
Arg	Ile	Ile	Glu	Ala	Ile	Leu	Ala	Gly	Glu	Arg	Asn	Pro	Asp	Lys	Leu
			35				40					45			
Ala	Asp	Met	Ala	Asp	Leu	Gln	Cys	Lys	Thr	Pro	Lys	Gly	Glu	Ile	Ala
	50					55					60				
Lys	Ala	Leu	Glu	Gly	Asn	Trp	Glu	Glu	Asp	Leu	Val	Phe	Val	Leu	Arg
65					70				75						80
Gln	Asn	Tyr	Asp	Thr	Phe	Lys	His	Phe	Cys	Thr	Gln	Leu	Asp	Arg	Cys
				85					90					95	
Asp	Thr	Glu	Leu	Glu	Lys	Leu	Met	Glu	Asn	Tyr	Arg	Thr	Glu	Val	Ala
			100					105					110		
Glu	Ala	Gly	Arg	Pro	Ser	Tyr	Ser	Pro	Thr	Lys	Lys	Arg	Arg	Asp	Tyr
			115				120					125			
His	Lys	Arg	Lys	Arg	Thr	Val	Gly	Phe	Asp	Val	Glu	Arg	Lys	Ala	Tyr
			130			135					140				
Asp	Met	Trp	Glu	Val	Asn	Val	Phe	Glu	Ile	Pro	Gly	Ile	Ser	His	Leu
145					150					155					160
Ile	Val	Leu	Glu	Leu	Met	Ser	Glu	Leu	Gly	Arg	Asp	Phe	Thr	Gln	Asn
				165				170						175	
Ser	His	Pro	Pro	Asn	Ser	Ser	Thr	Val	Asp	Ala	Thr	Ser	His	Arg	Thr
			180					185					190		
Pro	Arg	Tyr	Gln	Glu	Glu	Lys	Gly	Tyr	Gln	Val	Thr	Tyr	His	Ile	Val
		195					200						205		
Glu	Thr	Met	Ser	Gly											
210															

<210> 7339
 <211> 102
 <212> PRT
 <213> B.fragilis

<400> 7339

Asn	Ile	Ala	Ser	Leu	Asn	Gln	Tyr	Leu	Ser	Ser	Val	Glu	Gln	Gly	Gln
1				5					10					15	
Arg	Gln	His	Glu	Thr	Glu	Gln	Leu	Asp	Thr	Gln	Thr	Arg	Tyr	Asn	Glu
			20					25					30		
Tyr	Ile	Ile	Thr	Gly	Leu	Arg	Thr	Met	Trp	Gly	Ile	Ser	Thr	Glu	Glu
		35					40					45			
Leu	Asn	Ser	Lys	Phe	Gly	Asp	Arg	Leu	Trp	Lys	Tyr	Cys	Ser	Glu	Gln
	50					55					60				
Ala	Lys	Pro	Tyr	Leu	Glu	Asn	Gly	Lys	Leu	Lys	Leu	His	Asn	Asp	Arg
65					70					75				80	
Leu	Lys	Leu	Thr	Arg	Glu	Gly	Ile	Phe	Val	Ser	Asp	Gly	Ile	Met	Ser
				85					90					95	
Ala	Leu	Leu	Glu	Ile	Glu										
					100										

<210> 7340
 <211> 520
 <212> PRT
 <213> B.fragilis

<400> 7340

Ser	Pro	Leu	Thr	Val	His	Arg	Ser	Thr	Thr	Val	His	Arg	Arg	Ser	Phe
1				5					10					15	
Lys	Thr	Leu	Pro	Arg	Phe	Phe	Ser	Leu	Phe	Tyr	Leu	Leu	Met	Phe	Val
		20						25					30		
Gln	Arg	Val	Asn	Tyr	Gly	Glu	Ile	Ser	Val	Ile	Pro	Phe	Ile	Phe	Pro
		35					40					45			
Leu	Tyr	Ser	His	Tyr	Tyr	Leu	Leu	Leu	Leu	Arg	Ala	Asn	Tyr	Glu	Thr
	50					55					60				
Ile	Ile	Leu	Tyr	Asn	His	Met	Ala	Asn	Val	Ile	Lys	Leu	Arg	Lys	Gly
65				70					75					80	
Leu	Asp	Ile	Asn	Leu	Lys	Gly	Lys	Ala	Ala	Glu	Glu	Leu	Ser	Thr	Val
			85						90					95	
Lys	Glu	Pro	Gly	Phe	Tyr	Ala	Leu	Val	Pro	Asp	Asp	Phe	Pro	Gly	Val
			100					105					110		
Thr	Pro	Lys	Val	Val	Val	Lys	Glu	Gln	Glu	Tyr	Val	Met	Ala	Gly	Gly
		115					120					125			
Pro	Leu	Phe	Ile	Asp	Lys	Asn	His	Pro	Glu	Val	Lys	Phe	Val	Ser	Pro
	130					135					140				
Val	Ser	Gly	Val	Val	Thr	Ser	Val	Glu	Arg	Gly	Ala	Arg	Arg	Lys	Val
145					150				155					160	
Leu	Asn	Ile	Val	Val	Glu	Ala	Ala	Ala	Glu	Gln	Asp	Tyr	Glu	Glu	Phe
			165						170					175	
Gly	Lys	Lys	Asp	Val	Ser	Lys	Leu	Asp	Gly	Glu	Ala	Val	Lys	Ala	Ala
		180					185					190			
Leu	Leu	Glu	Ala	Gly	Met	Phe	Ala	Phe	Met	Lys	Gln	Arg	Pro	Tyr	Asp
	195					200					205				
Val	Ile	Ala	Asp	Pro	Thr	Val	Ala	Pro	Arg	Ala	Ile	Phe	Ile	Ser	Ala
	210					215					220				
Phe	Asp	Ser	Asn	Pro	Leu	Ala	Pro	Asp	Phe	Glu	Tyr	Val	Leu	Lys	Gly
225					230					235				240	
Glu	Glu	Ala	Asn	Phe	Gln	Thr	Gly	Leu	Asp	Ala	Leu	Ala	Lys	Ile	Ala
			245						250					255	

Lys Thr Tyr Leu Gly Ile Ser Ile Lys Gln Lys Ser Thr Ala Leu Thr
 260 265 270
 Gln Ala Lys Asn Val Thr Val Thr Val Phe Asp Gly Pro Asn Pro Ala
 275 280 285
 Gly Asn Val Gly Val Gln Ile Asn His Val Ala Pro Val Val Lys Gly
 290 295 300
 Glu Thr Val Trp Thr Ile Gly Ala Glu Ala Val Ile Phe Ile Gly Arg
 305 310 315 320
 Leu Phe Asn Thr Gly Arg Val Asp Leu Thr Arg Thr Val Ala Val Thr
 325 330 335
 Gly Ser Glu Val Val Lys Pro Ala Tyr Cys Arg Leu Lys Val Gly Ala
 340 345 350
 Leu Leu Thr His Val Phe Ala Gly Asn Val Thr Lys Asp Lys Glu Leu
 355 360 365
 Arg Tyr Ile Ser Gly Asn Val Leu Thr Gly Lys Gln Val Lys Pro Asn
 370 375 380
 Gly Phe Leu Gly Ala Phe Asp Ser Gln Leu Thr Val Ile Pro Glu Gly
 385 390 395 400
 Asp Asp Ile His Glu Met Leu Gly Trp Ile Met Pro Arg Phe Asn Gln
 405 410 415
 Phe Ser Val Asn Arg Ser Tyr Phe Ser Trp Leu Met Gly Asn Lys Lys
 420 425 430
 Glu Tyr Val Leu Asp Ala Arg Ile Lys Gly Gly Glu Arg His Met Ile
 435 440 445
 Met Ser Gly Glu Tyr Asp Lys Val Phe Pro Met Asp Ile Leu Pro Glu
 450 455 460
 Phe Leu Ile Lys Ala Ile Ile Ala Gly Asp Ile Asp Arg Met Glu Ala
 465 470 475 480
 Leu Gly Ile Tyr Glu Val Ala Pro Glu Asp Phe Ala Leu Cys Glu Phe
 485 490 495
 Val Asp Ser Ser Lys Leu Glu Leu Gln Arg Ile Val Arg Ala Gly Leu
 500 505 510
 Asp Met Leu Arg Ala Glu Met Met
 515 520

<210> 7341
 <211> 361
 <212> PRT
 <213> B.fragilis

<400> 7341
 Leu Met Lys Ala Leu Arg Asn Tyr Leu Asp Lys Ile Lys Pro Asn Phe
 1 5 10 15
 Glu Glu Gly Gly Lys Leu His Ala Phe Arg Ser Val Phe Asp Gly Phe
 20 25 30
 Glu Thr Phe Leu Phe Val Pro Asn Thr Thr Ser Lys Ser Gly Ala His
 35 40 45
 Ile His Asp Ser Ile Asp Ser Lys Arg Ile Met Ser Ile Val Val Ile
 50 55 60
 Ser Leu Ile Pro Ala Leu Leu Phe Gly Met Tyr Asn Val Gly Tyr Gln
 65 70 75 80
 His Phe Thr His Thr Gly Ala Gln Gly Gly Phe Ile Glu Met Phe Ile
 85 90 95
 Tyr Gly Phe Leu Ala Ile Leu Pro Lys Ile Ile Val Ser Tyr Val Val
 100 105 110
 Gly Leu Gly Ile Glu Phe Val Val Ala Gln Trp Lys Lys Glu Glu Ile
 115 120 125
 Gln Glu Gly Phe Leu Val Ser Gly Ile Leu Ile Pro Met Ile Val Pro
 130 135 140

Val Asp Cys Pro Leu Trp Ile Leu Ala Ile Ala Thr Ala Phe Ala Val
 145 150 155 160
 Ile Phe Ala Lys Glu Val Phe Gly Gly Thr Gly Met Asn Val Phe Asn
 165 170 175
 Val Ala Leu Val Thr Arg Ala Phe Leu Phe Phe Ala Tyr Pro Thr Lys
 180 185 190
 Met Ser Gly Asp Ala Val Trp Val Ala Gln Asp Ser Ile Phe Gly Leu
 195 200 205
 Gly Asn Thr Val Asp Gly Leu Thr Ala Ala Thr Ser Leu Gly Val Ala
 210 215 220
 Ser Thr Ala Thr Asp Pro Asn Gly Phe Pro Ala Phe Ser Trp Asp Met
 225 230 235 240
 Val Thr Gly Leu Ile Pro Gly Ser Ile Gly Glu Thr Ser Val Ile Ala
 245 250 255
 Ile Leu Ile Gly Ala Val Ile Leu Leu Trp Thr Gly Ile Ala Ser Trp
 260 265 270
 Arg Thr Met Leu Ser Val Phe Val Gly Gly Ala Phe Met Gly Trp Ile
 275 280 285
 Phe Asn Thr Val Gly Pro Asp Thr Ala Met Ala His Met Pro Trp Tyr
 290 295 300
 Glu His Leu Val Leu Gly Gly Phe Cys Phe Gly Ala Pro Phe Met Ala
 305 310 315 320
 Thr Asp Pro Val Thr Ser Ala Arg Thr Glu Thr Gly Lys Tyr Ile Phe
 325 330 335
 Gly Phe Leu Ile Gly Ala Met Ala Ile Ile Val Phe Thr Arg Val Ser
 340 345 350
 Ser Ala Arg Ser Ile Trp Ser Val His
 355 360

<210> 7342

<211> 432

<212> PRT

<213> B.fragilis

<400> 7342

Ile Met Cys Tyr Glu Leu His His Phe Ser Thr Lys His Ile Glu Ser
 1 5 10 15
 Gly Thr Asn Asp Ala Leu Gln Phe Gln Phe Arg Arg Val Asp Lys Phe
 20 25 30
 Ala Gln Ser Lys Val Phe Gly Arg His Phe Val Asp Thr Gln Ser Phe
 35 40 45
 His Ala Val Asp Val Pro Gly Asn Asp Cys Phe Asp Gln Glu Phe Arg
 50 55 60
 Gln Asn Val His Arg Glu Tyr Phe Val Val Phe Ala Gly His Asn His
 65 70 75 80
 Val Ala Phe Ala Ser Leu Asp Thr Gly Ile Glu His Ile Leu Leu Leu
 85 90 95
 Ile Pro His Gln Pro Ala Glu Ile Arg Ala Val Asp Ala Glu Leu Ile
 100 105 110
 Glu Thr Gly His Asp Pro Ser Gln His Phe Val Asp Val Val Thr Phe
 115 120 125
 Gly Asn His Cys Glu Leu Ala Val Glu Ser Ala Gln Glu Ser Val Arg
 130 135 140
 Leu His Leu Phe Ala Cys Gln His Ile Ala Ala Asp Val Thr Gln Leu
 145 150 155 160
 Phe Val Leu Arg His Val Ser Gly Lys His Met Gly Gln Gln Cys Ala
 165 170 175
 Asp Phe Gln Ser Ala Ile Ser Trp Phe His His Phe Arg Ser Cys Asn
 180 185 190

Gly Tyr Gly Thr Gly Gln Val His Pro Ser Gly Ile Glu Gln Thr Ser
 195 200 205
 Asp Glu Asp Tyr Gly Phe Arg Ala Asp Ser Pro His Arg Leu Thr Phe
 210 215 220
 His Tyr Gly Ser Tyr Val Ile Asp Leu Tyr Pro Tyr Ile Ser Gly Arg
 225 230 235 240
 Val Arg Ser Val Lys Tyr Gly Tyr Cys Asp Ile Phe Ser Leu Cys Gln
 245 250 255
 Gly Cys Arg Phe Leu Phe Asp Ala Asp Thr Gln Ile Arg Phe Gly Tyr
 260 265 270
 Phe Ser Gln Gly Ile Gln Ser Cys Leu Glu Ile Ser Phe Phe Pro Phe
 275 280 285
 Gln Asn Val Phe Glu Ile Gly Cys Gln Arg Val Ala Val Glu Ser Arg
 290 295 300
 Asp Glu Asp Ser Pro Arg Ser Asp Cys Arg Ile Gly Asn His Val Ile
 305 310 315 320
 Arg Thr Leu Phe His Lys Cys Lys His Thr Ser Phe Gln Glu Cys Ser
 325 330 335
 Phe His Ser Leu Ala Ile Glu Phe Gly Tyr Val Leu Leu Ala Glu Phe
 340 345 350
 Phe Val Ile Leu Leu Cys Gly Ser Leu His His Asp Val Gln His Leu
 355 360 365
 Thr Ala Cys Thr Ala Leu His Ala Cys Tyr Asn Ala Asn Gly Arg
 370 375 380
 Asn Lys Phe His Phe Arg Met Ile Leu Val Asp Lys Gln Gly Ser Pro
 385 390 395 400
 Gly His His Ile Phe Leu Leu Phe His His His Leu Arg Ser His Ser
 405 410 415
 Trp Glu Ile Ile Gly Tyr Glu Cys Val Glu Ser Arg Phe Phe His Arg
 420 425 430

<210> 7343
 <211> 355
 <212> PRT
 <213> B.fragilis

<400> 7343
 Ile Leu Arg Cys Thr Leu Ser Arg His Tyr Asn Phe Phe Trp Asp Gln
 1 5 10 15
 Leu Glu Lys Ala Asn Leu Phe Leu Gln Gly Val Ile Asp Thr Arg Glu
 20 25 30
 Lys Pro Met Asp Asp Lys Met Val Glu Trp Leu Phe Arg Asn Pro Leu
 35 40 45
 Ser Asp Gly Gly Thr Phe Thr Gly Val Ala Asp Ile Val Ser Lys Tyr
 50 55 60
 Gly Leu Val Pro Lys Glu Val Met Pro Glu Thr Asn Ser Ser Glu Asn
 65 70 75 80
 Thr Ser Arg Met Ala Gly Leu Ile Ala Glu Lys Leu Arg Glu Tyr Gly
 85 90 95
 Leu Gln Leu Arg Asp Arg Ala Ala Lys Gly Ala Lys Gln Pro Ala Leu
 100 105 110
 Glu Lys Asp Lys Thr Glu Met Leu Gly Thr Val Tyr Arg Met Leu Val
 115 120 125
 Leu Asn Leu Gly Val Pro Pro Thr Glu Phe Thr Trp Thr Arg Lys Asp
 130 135 140
 Glu Lys Gly Asn Pro Val Glu Thr Ala Gln Tyr Thr Pro Met Ser Phe
 145 150 155 160
 Leu Glu Lys Tyr Gly Asp Lys Asn Leu Leu Asp Asn Tyr Val Met Leu
 165 170 175

Met Asn Asp Pro Ser Arg Glu Tyr Tyr Lys Cys Tyr Glu Ile Asp Phe
 180 185 190
 Asp Arg His Arg Tyr Asp Gly Arg Asn Trp Thr Tyr Val Asn Leu Pro
 195 200 205
 Ala Asp Glu Ile Lys Glu Met Ala Ile Ala Ser Leu Lys Asp Ser Thr
 210 215 220
 Met Met Tyr Phe Ser Cys Asp Val Gly Lys Phe Leu Asn Ser Glu Arg
 225 230 235 240
 Gly Leu Leu Asp Val Asn Asn Tyr Asp Tyr Ala Ser Leu Met Gly Thr
 245 250 255
 Thr Phe Gly Met Asp Lys Lys Gln Arg Val Gln Thr Phe Ala Ser Gly
 260 265 270
 Ser Ser His Ala Met Thr Leu Met Ala Val Asp Val Lys Asp Asn Lys
 275 280 285
 Pro Val Lys Trp Met Val Glu Asn Ser Trp Gly Ala Thr Asn Gly Tyr
 290 295 300
 Gln Gly His Leu Ile Met Thr Asp Glu Trp Phe Asp Glu Tyr Met Phe
 305 310 315 320
 Arg Leu Val Val Glu Lys Lys Phe Ala Thr Pro Lys Val Leu Glu Ile
 325 330 335
 Leu Lys Gln Lys Pro Ile Arg Leu Pro Ala Trp Asp Pro Met Phe Ala
 340 345 350
 Pro Glu Gln
 355

<210> 7344

<211> 812

<212> PRT

<213> B.fragilis

<400> 7344

Ile Tyr His Thr Arg Ser Phe Phe Tyr Ile Cys Arg Ile Pro Ser Pro
 1 5 10 15
 Ile Tyr Val Lys Ser Ala Gly Ser Phe His Leu Phe Thr Ser Phe Ser
 20 25 30
 Thr Phe Ile Cys Phe Ile Gly Tyr Phe Cys Arg Arg Tyr Asn Tyr Arg
 35 40 45
 Val Ser Glu Arg Glu Leu Ala Glu Gly Val Leu Asn Gln Asn Ser Tyr
 50 55 60
 Thr Met Val Lys Phe Asn Ala Met Lys Thr Lys Pro Leu Arg Leu Leu
 65 70 75 80
 Arg Gln Lys Arg Ala Ser Trp Leu Lys Ser Val Phe Val Leu Thr Cys
 85 90 95
 Leu Leu Leu Ser Thr Ser Val Ala Met Ala Gln Thr Lys Thr Val Thr
 100 105 110
 Gly Thr Val Thr Asp Ser Phe Asn Glu Pro Leu Ile Gly Ala Ser Ile
 115 120 125
 Leu Val Lys Gly Thr Ser Thr Gly Ala Val Thr Asp Met Asp Gly Lys
 130 135 140
 Tyr Ser Ile Ser Val Thr Pro Asn Asp Val Leu Val Phe Ser Tyr Val
 145 150 155 160
 Gly Tyr Glu Lys Gln Glu Ile Lys Val Gly Gln Gln Thr Val Ile Asn
 165 170 175
 Val Thr Leu Lys Asp Asp Ser Gln Met Leu Ala Glu Thr Val Ile Ile
 180 185 190
 Gly Tyr Gly Ser Ala Lys Lys Arg Asp Leu Thr Gly Ser Ile Thr Asn
 195 200 205
 Ile Lys Gly Ser Glu Ile Ala Asn Lys Pro Ala Thr Asn Pro Leu Ser
 210 215 220

Ser Leu Gln Gly Lys Ile Ala Gly Val Gln Ile Val Asn Ser Gly Gln
 225 230 235 240
 Ala Gly Ala Asp Pro Glu Ile Arg Ile Arg Gly Thr Asn Ser Ile Asn
 245 250 255
 Gly Tyr Lys Pro Leu Tyr Val Val Asp Gly Leu Phe Asn Asp Asn Ile
 260 265 270
 Asn Phe Leu Asn Pro Glu Asp Ile Glu Ser Met Glu Val Leu Lys Asp
 275 280 285
 Pro Ser Ser Leu Ala Ile Phe Gly Val Arg Gly Ala Asn Gly Val Ile
 290 295 300
 Ile Val Thr Thr Lys Arg Ala Lys Glu Gly Gln Thr Leu Val Asn Ile
 305 310 315 320
 Asn Thr Ser Phe Gly Trp Lys Ser Val Val Asp Lys Ile Lys Met Val
 325 330 335
 Asn Ala Pro Gln Phe Lys Glu Leu Tyr Asn Glu Gln Met Ala Asn Gln
 340 345 350
 Gly Asn Ala Leu Phe Asp Phe Ser Asn Trp Asn Ala Asn Thr Asp Trp
 355 360 365
 Gln Asp Glu Ile Phe Gln Thr Gly Phe Ile Thr Asn Asn Asn Val Ser
 370 375 380
 Ile Thr Gly Ala Ser Glu Lys His Ser Phe Tyr Leu Gly Val Gly Tyr
 385 390 395 400
 Ser His Glu Gln Gly Asn Ile Lys His Glu Lys Tyr Ser Lys Val Thr
 405 410 415
 Ile Asn Ala Ser Asn Asp Tyr Lys Ile Thr Lys Asp Ile Lys Val Gly
 420 425 430
 Phe Gln Phe Asn Gly Ala Arg Met Leu Pro Ala Asp Ser Lys Thr Val
 435 440 445
 Leu Asn Ala Ile Arg Thr Thr Pro Val Ala Pro Val Tyr Asn Glu Glu
 450 455 460
 Tyr Gly Leu Tyr Thr Ser Leu Pro Glu Phe Gln Lys Ala Gln Met Asn
 465 470 475 480
 Asn Pro Met Val Asp Val Asn Leu Arg Ala Asn Thr Thr Arg Ala Val
 485 490 495
 Asn Tyr Arg Ala Ser Gly Ser Ile Tyr Gly Glu Val Asp Phe Leu Lys
 500 505 510
 His Phe Thr Phe Lys Ala Met Phe Ser Met Asp Tyr Ala Thr Asn Asp
 515 520 525
 Ser Arg Thr Tyr Lys Pro Ile Lys Val Tyr Asp Ala Thr Phe Ala
 530 535 540
 Gly Asn Val Ala Thr Leu Gly Asn Gly Lys Thr Glu Val Ser Gln Asn
 545 550 555 560
 Lys Gln Asn Glu Thr Lys Val Gln Ser Asp Tyr Leu Leu Thr Tyr Gln
 565 570 575
 Asn Ser Phe Ala Asp Gly Thr His Asn Leu Thr Ala Thr Ala Gly Phe
 580 585 590
 Thr Thr Tyr Tyr Asn Ser Leu Ser Gly Leu Asp Ala Ser Arg Gly Gln
 595 600 605
 Gly Ile Gly Leu Val Ile Pro Asn Asn Pro Asp Lys Trp Phe Val Ser
 610 615 620
 Ile Gly Asp Leu Ala Thr Ala Thr Asn Gly Ser Thr Gln Trp Glu Arg
 625 630 635 640
 Thr Thr Val Ser Met Leu Ala Arg Ile Ile Tyr Asn Tyr Lys Gly Lys
 645 650 655
 Tyr Leu Phe Asn Gly Ser Phe Arg Arg Asp Gly Ser Ser Ala Phe Ala
 660 665 670
 Tyr Thr Gly Asn Gln Trp Gln Asn Phe Tyr Ser Ile Gly Ala Gly Trp
 675 680 685
 Leu Met Thr Glu Glu Glu Phe Met Lys Asp Ile Thr Trp Leu Asp Met

690		695		700
Leu Lys Leu Lys Gly Ser Trp Gly Thr Leu Gly Asn Gln Asn Met Asp				
705		710		715
Lys Ala Tyr Pro Ala Glu Pro Leu Leu Glu Asn Ala Phe Ala Ala Val				
	725		730	735
Phe Gly Lys Pro Ala Ile Ile Tyr Pro Gly Tyr Gln Leu Ala Tyr Leu				
	740		745	750
Pro Asn Pro Arg Leu Arg Trp Glu Lys Val Glu Ala Trp Glu Thr Gly				
	755		760	765
Phe Glu Thr Asn Met Phe Arg Asn Arg Phe His Phe Glu Gly Val Tyr				
	770		775	780
Tyr Lys Lys Asn Thr Lys Asp Leu Leu Ala Thr Val Pro Gly Leu Ser				
785		790		795
Gly Thr Arg Thr Gly His Arg Gln Ser Trp Arg Asp				800
	805		810	

<210> 7345
 <211> 148
 <212> PRT
 <213> B.fragilis

<400> 7345

His Ile Phe Leu Ser Leu Phe Arg His Arg Met Ser Asn Ser Ser Ala	
1	5
Gly Gln Gln Gly Arg Ser Phe Phe Pro Ala Arg Leu Tyr Val Cys Ala	
	20
Met Gly Lys Pro Ile Ile Lys Ile Leu Tyr Phe His Arg Arg Arg Thr	
	35
Asn Ala Ser Gly Trp Tyr Arg Leu Glu Tyr Ile Phe Gln Arg Gly Lys	
	50
Lys Thr Leu Arg Tyr Val Leu Ser Thr Arg Asp Pro Glu Tyr Leu Val	
65	70
Cys Phe Cys Ser Pro Cys Met Val Glu Arg Ser Glu Met Ile Val Phe	
	85
Val Ala Glu Leu Leu Leu Glu Ile His Lys Val Lys Tyr Ser Tyr Leu	
	100
Lys Val Thr Pro Ser Tyr Ala Tyr Ala Thr Pro Lys Tyr Lys Ser Arg	
	115
Ile Asn Gln Met Cys Lys Lys Ser Arg Tyr His Lys Thr Pro Val Ile	
	130
Ile Asp Gly Leu	
145	

<210> 7346
 <211> 101
 <212> PRT
 <213> B.fragilis

<400> 7346

Val Val Leu Tyr Met Glu Gln Ser Pro Lys Val Gln Asn Lys Ile Thr	
1	5
Lys Ile Leu Glu Ile Leu Glu Tyr Ile Glu Cys Ile Pro Thr Lys Tyr	
	20
Leu Lys His Ile Glu Gly Thr Asp Gly Leu Tyr Glu Met Arg Ile Thr	
	35
Leu Gly Ser Asp Ile Phe Arg Val Phe Cys Phe Phe Asp Lys Gly Arg	
	50
Leu Val Val Leu Leu Ser Gly Phe Gln Lys Lys Thr Gln Lys Thr Pro	
65	70
	75
	80

Lys Lys Glu Ile Asp Lys Ala Val Arg Leu Met Ala Gln Tyr Tyr Asp
 85 90 95
 Asp Lys Lys Arg Arg
 100

<210> 7347

<211> 316

<212> PRT

<213> B.fragilis

<400> 7347

Phe His Thr His Ile Asn Phe Val Met Gly Gln Gln Ser Arg Glu Ser
 1 5 10 15
 Leu Asp Tyr Glu Lys Ile Ile Leu Lys Asn Met Ala Asn Thr Asn Met
 20 25 30
 Glu His Gly Glu Ile Ile Leu Tyr Gln Pro Asp Asn Thr Ile Lys Leu
 35 40 45
 Glu Val Arg Ile Glu Asn Glu Thr Val Trp Leu Thr Gln Ala Gln Ile
 50 55 60
 Val Asn Leu Phe Gln Ser Ser Lys Ala Asn Ile Ser Glu His Ile Arg
 65 70 75 80
 Asn Ile Tyr Asp Ser Asp Glu Leu Ser Ala Glu Ser Thr Val Arg Lys
 85 90 95
 Phe Arg Thr Val Arg Met Glu Gly Asn Arg Lys Val Thr Arg Ile Leu
 100 105 110
 Glu Tyr Tyr Asn Leu Asp Met Ile Ile Ser Val Gly Tyr Arg Val Asn
 115 120 125
 Ser Lys Arg Gly Val Gln Phe Arg Gln Trp Ser Thr Gly Val Leu Lys
 130 135 140
 Glu Tyr Leu Leu Lys Gly Tyr Ala Ile Asn Gln Arg Val Glu Gln Leu
 145 150 155 160
 Glu Asn Lys Ala Asn Thr His Asp Arg Gln Leu Glu Glu Leu Thr Asn
 165 170 175
 Lys Val Asp Phe Phe Val Arg Thr Ser Leu Pro Pro Ile Glu Gly Val
 180 185 190
 Phe Phe Asn Gly Gln Ile Phe Asp Ala Tyr Val Phe Ser Ala Gln Leu
 195 200 205
 Ile Lys Ser Ala Lys Ser Ser Leu Val Leu Ile Asp Asn Phe Val Asp
 210 215 220
 Glu Ser Val Leu Leu Leu Leu Ser Lys Arg Leu Pro Gly Val Thr Ser
 225 230 235 240
 Ile Ile Tyr Thr Lys Gln Val Thr Pro Gln Leu Glu Leu Asp Leu Thr
 245 250 255
 Lys His Asn Ser Gln Tyr Pro Pro Ile Asp Ile Arg Thr Tyr Gln His
 260 265 270
 Ala His Asp Arg Phe Leu Ile Ile Asp Asn Leu Glu Val Tyr His Ile
 275 280 285
 Gly Ala Ser Leu Lys Asp Leu Gly Lys Lys Leu Phe Ala Phe Ser Lys
 290 295 300
 Met Glu Met Pro Ala Lys Ile Ile Thr Asp Leu Leu
 305 310 315

<210> 7348

<211> 89

<212> PRT

<213> B.fragilis

<400> 7348

His Arg Val Lys Ala Cys Ser Leu Asp Val Asn Lys Lys Phe Phe Lys

1		5		10		15									
Cys	Lys	Arg	Leu	Val	Ile	Cys	Ala	Gln	Glu	Pro	Asp	Asn	Leu	Gln	Lys
		20		25		30									
Thr	Leu	Thr	Met	Leu	Ile	Glu	Glu	Arg	Tyr	Lys	Asp	Glu	Asp	Thr	Gly
		35		40		45									
Ser	Gly	Gly	Val	Asn	Ser	Leu	Pro	Lys	Pro	Glu	Leu	Ser	Tyr	Ser	Ala
	50			55		60									
Gly	Val	Tyr	Phe	Phe	Cys	Leu	Tyr	Phe	Ser	Asp	Ser	Leu	Ser	Val	Thr
65				70		75								80	
Asp	Arg	Asn	Pro	Leu	Lys	Leu	Arg	Phe							
				85											

<210> 7349
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 7349															
Ala	Asn	His	Lys	His	Gln	Tyr	Ile	Lys	Glu	Leu	Ser	Leu	Gln	Glu	Arg
1				5				10					15		
Ala	Gly	Ile	Lys	Arg	Arg	Ile	Val	Glu	Leu	Phe	His	Ile	Tyr	Glu	Glu
			20			25						30			
Gln	Phe	Tyr	Asn	Pro	Leu	Tyr	Lys	Thr	Ser	Ile	Ser	Gln	Asn	Arg	Asn
		35				40						45			
Gln	Ala	Leu	Arg	Gln	Ile	Cys	Cys	Lys	Lys	Thr	Lys				
	50					55					60				

<210> 7350
 <211> 121
 <212> PRT
 <213> B.fragilis

<400> 7350															
Val	Leu	Asp	Asn	Ala	Tyr	Thr	Ser	Ile	Phe	Gln	Arg	Gln	Leu	Ile	Pro
1				5				10					15		
Glu	Glu	Val	Thr	Thr	Leu	Ala	Asn	Thr	Ser	Phe	Ala	Ala	Thr	Ser	Gly
			20			25						30			
Lys	Gly	Gly	Thr	Ile	Ser	Gly	Val	Pro	Ser	Ser	Ala	Gln	Tyr	Leu	Tyr
		35				40						45			
Phe	Met	Ala	Asn	Ile	Lys	Thr	Asp	Val	Gly	Gln	Val	Phe	Pro	Ala	Val
	50					55					60				
Glu	Gly	Thr	Thr	Ser	Ala	Asp	Ala	Arg	Leu	Arg	Leu	Asn	Arg	Leu	Gln
65				70				75						80	
Gly	Thr	Ala	Pro	Ser	Asp	Trp	Thr	Ala	Asn	Ala	Phe	Val	Asp	Tyr	Cys
				85				90						95	
Thr	Pro	Leu	Ala	Ser	Ala	Leu	Ser	Phe	Tyr	Pro	Asp	Val	Thr	Ile	Ser
			100					105					110		
Thr	Pro	Arg	Tyr	Pro	Arg	Met	Ser	Glu							
			115					120							

<210> 7351
 <211> 498
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (489), (490), (491), (492), (495)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 7351

Pro	Met	Arg	Asn	Leu	Arg	Ala	Ile	Leu	Ile	Val	Leu	Leu	Cys	Leu	Cys
1				5				10					15		
Gly	Ile	Tyr	Val	Gln	Ala	Gln	Gln	Leu	Glu	Ile	Lys	Gly	Leu	Val	Thr
			20					25					30		
Ser	Ser	Glu	Asp	Lys	Gln	Pro	Leu	Ile	Gly	Ala	Thr	Val	Ala	Val	Lys
		35					40					45			
Gly	Val	Pro	Gly	Arg	Gly	Val	Val	Thr	Asp	Met	Asp	Gly	Arg	Tyr	Thr
	50					55					60				
Leu	Lys	Ile	Glu	Pro	Ser	Asp	Lys	Ile	Leu	Val	Ile	Ser	Tyr	Ile	Gly
65					70					75					80
Met	Lys	Ser	Ser	Glu	Val	Lys	Val	Pro	Lys	Asn	Gly	Val	Leu	Asn	Val
				85					90					95	
Val	Leu	Gln	Pro	Glu	Ser	Leu	Asn	Leu	Asp	Glu	Val	Val	Val	Thr	Gly
			100					105					110		
Tyr	Gly	Asn	Phe	Ser	Lys	Ser	Ser	Phe	Thr	Gly	Ser	Ala	Asn	Thr	Leu
		115					120					125			
Arg	Ala	Asp	Met	Leu	Lys	Asn	Val	Pro	Val	Leu	Ser	Val	Glu	Gln	Lys
	130					135					140				
Leu	Gln	Gly	Met	Thr	Thr	Gly	Val	Asn	Ile	Thr	Ser	Gly	Ser	Gly	Gln
145					150					155					160
Pro	Gly	Ala	Asn	Gln	Ser	Ile	Arg	Ile	Arg	Gly	Met	Gly	Ser	Phe	Asn
				165					170					175	
Ala	Ser	Asn	Glu	Pro	Leu	Phe	Val	Ile	Asp	Gly	Ile	Pro	Val	Thr	Ser
			180					185					190		
Gly	Ser	Met	Gly	Ala	Gly	Thr	Gly	Ala	Asp	Ala	Ala	Tyr	Met	Asn	Asn
		195					200					205			
Ala	Lys	Thr	Asn	Val	Met	Ser	Thr	Leu	Asn	Pro	Ala	Asp	Ile	Glu	Asn
	210					215					220				
Ile	Thr	Val	Ile	Lys	Asp	Ala	Ala	Ala	Ala	Ser	Leu	Tyr	Gly	Ser	Arg
225					230					235					240
Ala	Ala	Asn	Gly	Val	Ile	Leu	Ile	Thr	Thr	Lys	Lys	Gly	Ala	Val	Gly
				245					250					255	
Arg	Thr	Lys	Val	Thr	Leu	Ser	Ala	Ser	Gly	Gly	Phe	Ser	Asn	Ala	Ala
			260					265					270		
Val	Asn	Phe	Arg	Pro	Thr	Leu	Asn	Gly	Glu	Gln	Arg	Arg	Glu	Met	Ile
		275					280					285			
Tyr	Glu	Gly	Leu	Tyr	Asn	Ser	Ala	Val	Asp	Lys	Gly	Leu	Gln	Ser	Pro
	290					295					300				
Glu	Ala	Tyr	Ala	Asn	Ala	Asn	Ile	Asp	Thr	Tyr	Ala	Gly	Ile	Pro	Glu
305					310					315					320
Leu	Gly	Tyr	Thr	Asp	Trp	Arg	Lys	Glu	Leu	Ile	Arg	Thr	Ala	His	Asn
				325					330					335	
Gln	Asn	Tyr	Glu	Val	Thr	Ala	Ser	Gly	Gly	Asn	Glu	Arg	Thr	Thr	Phe
			340					345					350		
Tyr	Ala	Ser	Leu	Gly	Phe	Asn	Arg	Gln	Glu	Gly	Leu	Val	Glu	Asn	Ser
		355					360					365			
Asn	Leu	Asp	Arg	Tyr	Ser	Ala	Arg	Leu	Asn	Met	Thr	His	Lys	Ile	Gly
	370					375					380				
Ser	Arg	Val	Glu	Val	Gly	Gly	Asn	Met	Met	Phe	Thr	Gln	Ile	Ser	Gln
385					390					395					400
Glu	Met	Asn	Glu	Glu	Arg	Gly	Ser	Asn	Ile	Asn	Pro	Phe	Leu	Cys	Val
				405					410				415		
Ala	Val	Ser	Ala	Thr	Pro	Ser	Met	Pro	Val	Arg	Asp	Ala	Ser	Gly	Asn
			420					425					430		
Tyr	Val	Gly	Ser	Tyr	Ala	Gly	Thr	Asn	Val	Asn	Pro	Leu	Arg	Asp	Ile
		435					440					445			
Arg	Thr	Asp	Tyr	Asn	Arg	Ser	Arg	Met	Thr	Arg	Met	Phe	Ser	Thr	Gly

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64
 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96
 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112
 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128
 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144
 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160
 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176
 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192
 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208
 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224
 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240
 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256
 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272
 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288
 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304
 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320
 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336
 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352
 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368
 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384
 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400

450
 Tyr Ala Ser Val Asp Ile Ile Lys Gly Leu Lys Leu Lys Glu Val Phe
 465 470 475 480
 Thr Gly Ala Ala Lys Gly Ala His Xaa Xaa Xaa Xaa Ser Lys Xaa Phe
 485 490 495
 Ser Arg

<210> 7352
 <211> 332
 <212> PRT
 <213> B.fragilis

<400> 7352
 Lys His Gly Lys Pro Val Leu Lys Pro Ile Cys Ser Val Thr Val Ser
 1 5 10 15
 Ile Ser Lys Glu Tyr Thr Ile Arg Arg Ile Pro Arg Thr Cys Ser Pro
 20 25 30
 Pro Tyr Arg Val Cys Arg Glu Pro Val Pro Gly Ile Gly Asn Leu Gly
 35 40 45
 Glu Ile Glu Asn Lys Gly Val Glu Leu Met Ala Ser Trp Arg Asp Gln
 50 55 60
 Ile Gly Asp Trp Gly Tyr Ser Val Ser Ala Asn Leu Thr Thr Ile Ser
 65 70 75 80
 Asn Lys Val Lys Ser Leu Val Gln Asp Gly Tyr Ser Ile Ile Ala Gly
 85 90 95
 Asp Lys Ser Gln Ser Tyr Thr Met Ala Gly Tyr Pro Ile Gly Tyr Phe
 100 105 110
 Tyr Gly Tyr Lys Val Ala Gly Val Tyr Gln Asn Gln Ala Glu Ile Asp
 115 120 125
 Ala Ser Pro Val Asn Thr Leu Ala Thr Val Thr Pro Gly Asp Leu Lys
 130 135 140
 Phe Ala Asp Val Asn Gly Asp Gly Lys Ile Thr Pro Asp Asp Arg Thr
 145 150 155 160
 Lys Ile Gly Asp Pro Thr Pro Asp Val Thr Tyr Gly Ile Ser Leu Gly
 165 170 175
 Leu Ser Tyr Lys Asn Trp Glu Leu Ser Met Glu Met Met Gly Gln Gly
 180 185 190
 Gly Asn Gln Ile Tyr Arg Thr Trp Asp Asn Tyr Asn Trp Ala Gln Phe
 195 200 205
 Asn Tyr Met Glu Gln Arg Leu Asp Arg Trp His Gly Glu Gly Thr Ser
 210 215 220
 Asn Thr Gln Pro Leu Leu Asn Thr Lys His Ala Ile Asn Ser Glu Asn
 225 230 235 240
 Ser Glu Tyr Phe Ile Glu Asp Gly Ser Phe Phe Arg Ile Arg Asn Leu
 245 250 255
 Gln Leu Ala Tyr Ser Phe Asp Lys Thr Leu Leu Ser Lys Ile Arg Met
 260 265 270
 Gln Ala Leu Lys Val Tyr Val Asn Ile Gln Asn Leu Lys Thr Trp Lys
 275 280 285
 His Asn Thr Gly Tyr Thr Pro Gln Ile Gly Gly Ser Ala Ile Ala Phe
 290 295 300
 Gly Val Asp Asn Gly Thr Tyr Pro Val Pro Ala Val Tyr Thr Phe Gly
 305 310 315 320
 Ile Asn Leu Thr Phe Cys Leu His Gln Gly Ala Ala
 325 330

<210> 7353
 <211> 89

<212> PRT
 <213> B.fragilis

<400> 7353

His	Thr	Phe	Cys	Gln	Leu	Ser	Phe	Arg	Tyr	Ser	Ile	Val	Ile	Ser	Thr
1				5					10					15	
Ala	Lys	Val	Ser	Asn	Glu	Thr	Asn	Lys	Ser	Arg	Lys	Arg	Cys	Glu	Gln
			20					25					30		
Met	Glu	Thr	Pro	Cys	Thr	Phe	Asn	Ile	Tyr	Arg	Thr	Trp	Asn	Pro	Thr
		35					40					45			
Asn	Val	Glu	Glu	Ala	Ser	Ser	Met	Ile	Tyr	Leu	Pro	Tyr	Asp	Gly	Cys
		50				55					60				
Trp	Ile	Leu	Tyr	Asn	Cys	Met	Glu	Leu	Cys	Ala	Leu	Ile	Lys	Glu	Leu
65				70					75						80
Phe	Glu	Leu	His	Leu	Leu	Ser	Asn	Cys							
				85											

<210> 7354
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 7354

Thr	Glu	Tyr	Arg	Ser	Lys	Asn	Leu	Asn	Gly	Phe	Ala	Arg	Met	Ile	Glu
1				5					10					15	
Ile	Ser	Pro	Gly	Arg	Ile	Ile	Tyr	Gly	Arg	Ser	Ile	Gln	Arg	Ala	Ile
			20					25				30			
Tyr	Lys	Thr	Tyr	Asn	Phe	Tyr	Gln	Lys	Ser	Ile	Lys	Val	Leu	Ile	Ala
		35				40					45				
Ala	Thr	Glu	Tyr	Tyr	Ser	Leu	Ile	Arg	Gly	Tyr	Leu	Gly	Val	Glu	Ile
		50				55					60				
Val	Thr	Ser	Gly												
65															

<210> 7355
 <211> 101
 <212> PRT
 <213> B.fragilis

<400> 7355

Lys	Lys	Glu	Val	Met	Met	Asp	Ile	Thr	Thr	Leu	Asp	Gln	Phe	Lys	Asp
1				5					10					15	
Glu	Ile	Tyr	Gly	Val	Lys	Gly	Thr	Pro	Arg	Arg	Asp	Asn	Leu	Glu	Arg
			20					25				30			
Glu	Leu	Glu	Thr	Leu	Arg	Ile	Gly	Val	Gln	Ile	Arg	Asn	Ala	Arg	Gln
		35					40				45				
Lys	Lys	Glu	Met	Thr	Gln	Ala	Gln	Leu	Ala	Glu	Arg	Ile	Asn	Lys	Lys
		50				55					60				
Arg	Thr	Phe	Ile	Ser	Lys	Val	Glu	Asn	Asp	Gly	Gly	Asn	Leu	Thr	Leu
65				70					75					80	
Lys	Thr	Leu	Ile	Asp	Ile	Val	Glu	Arg	Gly	Leu	Gly	Gly	Lys	Leu	Asn
				85				90					95		
Ile	Glu	Val	Lys	Ile											
				100											

<210> 7356
 <211> 373
 <212> PRT
 <213> B.fragilis

<400> 7356

Ile His Lys Phe Met Pro Arg Thr Ala Lys Lys Gly Phe Thr Tyr Tyr
 1 5 10 15
 Gly Phe Asp Thr Asp His Phe Tyr Asp Pro Lys Val Lys Arg Leu Lys
 20 25 30
 Asn Lys Phe Gly Met Glu Gly Trp Ala Val Phe His Phe Ile Val Asn
 35 40 45
 Glu Ile His Arg Val Glu Gly Tyr Tyr Met Ile Met Asp Ser Asp Gly
 50 55 60
 Leu Phe Asp Val Ser Asp Tyr Ser Arg Met Asp Glu Gln Arg Ile Ala
 65 70 75 80
 Gly Ile Val Asp Tyr Cys Ala Glu Leu Gly Leu Phe Asp Lys Gly Leu
 85 90 95
 Trp Arg Ser Arg Gln Val Leu Thr Ser Glu Glu Ile Gln Asn Arg Tyr
 100 105 110
 Met Gly Ile Cys Lys Ser Ile His Arg Lys Pro Ser Ile Ser Asp Asp
 115 120 125
 Tyr Leu Leu Leu Asn Ala Ala Ala Pro Ala Ala Thr Ser Ser Pro Gln
 130 135 140
 Val Ala Ala Pro Cys Pro Ala Thr His Thr Ala Pro Val Ala Glu Pro
 145 150 155 160
 Val Arg Ser Gly Glu Lys Glu Lys Asp Thr Glu Leu Met Gln Ala Ile
 165 170 175
 Ala Asp Phe Lys Arg Arg Leu Gln Glu Pro Lys Ser Ser Ala Gly Val
 180 185 190
 Val Arg Glu Glu Ser Gly Ile Ile Arg Glu Asn Arg Pro Gln Asn Lys
 195 200 205
 Ile Lys Glu Asn Ile Ser Ser Pro Asn Pro Ser Gly Glu Ser Ser Tyr
 210 215 220
 Thr Pro Glu Arg Glu Glu Glu Arg Asn Ser Leu Ser Gly Lys Leu Gln
 225 230 235 240
 Tyr Leu Gly Val Asp Ser Asn Val Ile Gln Trp Val Arg Leu Leu Lys
 245 250 255
 Ser Arg Tyr Pro Asp Phe Pro Ile Glu Lys Ala Ile Ser Asp Met Glu
 260 265 270
 Gln Ser Asn Phe Gln Leu Thr Lys Glu Asn Tyr Leu Tyr Pro Leu Ile
 275 280 285
 Lys Asn Tyr Ile Ala Lys Tyr Asn Ala Asp His Gly Ser Glu Glu Arg
 290 295 300
 Ala Arg Gln Gln Glu Glu Ile Leu Arg Thr Arg Arg Lys Thr Leu Glu
 305 310 315 320
 Leu Leu Gly Val Pro Val Lys Asp Gln Gln Glu Ile Leu Gln Leu Ala
 325 330 335
 Ser Val Ala Pro Leu Val Leu Asp Thr Ala Leu Lys Glu Thr Trp Gly
 340 345 350
 Asn Lys Lys Ile Lys Ser Pro Thr Met Phe Leu Leu Ser Arg Met Arg
 355 360 365
 Arg Ala Val Ser Ala
 370

<210> 7357

<211> 125

<212> PRT

<213> B.fragilis

<400> 7357

Ile Met Asp Thr Glu Asn Leu Arg Lys Lys Tyr Ile Leu Trp Ser Asn
 1 5 10 15

Ile Val Asp Leu Arg Ser Arg Gly Ile Asn Ile Thr Arg Thr Ala His
 20 25 30
 Cys Leu Gly Val Ser Arg Asp Thr Val Lys His Leu Gln Ser Leu Ser
 35 40 45
 Ser Asp Glu Leu Phe Arg Lys Tyr Gln Glu Ser Arg Arg Cys Lys Leu
 50 55 60
 Gln Asn Tyr Glu Gln Ala Val Val Ser Leu Leu Phe Thr Phe Pro Ser
 65 70 75 80
 Thr Ser Ser Ser Arg Val His Asp Tyr Leu Lys Glu His Tyr Pro Asp
 85 90 95
 Phe Pro Asn Val Cys Asp Lys Thr Val His Asn Tyr Val Gln Phe Ile
 100 105 110
 Arg Lys Lys His His Leu Pro Phe Arg Ser Cys Arg Leu
 115 120 125

<210> 7358

<211> 209

<212> PRT

<213> B.fragilis

<400> 7358

Tyr Met Pro Thr Ile Phe Gln Ile Pro Thr Phe Ile Gln Ile Leu Glu
 1 5 10 15
 Phe Ile Gly Thr Phe Ala Phe Ala Ile Ser Gly Ile Arg Leu Ala Ser
 20 25 30
 Ala Lys Gln Phe Asp Trp Phe Gly Ala Tyr Val Ala Gly Val Ala Val
 35 40 45
 Ala Ile Gly Gly Gly Thr Ile Arg Asp Val Leu Leu Asp Val Thr Pro
 50 55 60
 Phe Trp Met Thr Asn Pro Ile Tyr Leu Ile Cys Ser Ala Leu Ala Leu
 65 70 75 80
 Leu Trp Val Ile Phe Phe Arg Lys His Leu Ile His Met His Asn Thr
 85 90 95
 Phe Phe Ile Phe Asp Ser Ile Gly Leu Ala Leu Phe Thr Val Val Gly
 100 105 110
 Ile Ser Lys Thr Ile Asp Leu Gly Tyr Ala Phe Trp Val Ala Ile Ile
 115 120 125
 Met Gly Thr Met Thr Gly Ala Ala Gly Gly Val Ile Arg Asp Val Phe
 130 135 140
 Ile Asn Glu Ile Pro Leu Ile Phe Arg Lys Glu Ile Tyr Ala Met Ala
 145 150 155 160
 Cys Val Ile Gly Gly Val Ile Tyr Trp Gly Leu Asp Arg Leu Gly Val
 165 170 175
 Asp Ala Ala Leu Thr Gln Val Ile Ser Gly Cys Cys Ile Phe Val Val
 180 185 190
 Arg Ala Leu Ala Val Lys Tyr Gln Ile Cys Leu Pro Ile Leu Lys Gly
 195 200 205
 Glu

<210> 7359

<211> 103

<212> PRT

<213> B.fragilis

<400> 7359

Lys Lys Asn Leu Ile His Asn Arg Ile Glu Met Asp Ile Asn Gln Met
 1 5 10 15
 Ile Lys Lys Ala Asp Asp Ala Tyr Ile Asn Tyr Arg His Arg Cys Glu

	20		25		30										
Ser	Leu	Ala	Lys	Glu	Ala	Gln	Lys	Tyr	Ile	Asp	Trp	Asp	Asp	Lys	Val
	35						40					45			
Ser	Cys	Glu	His	Leu	Pro	Ala	Asp	Gly	Leu	Cys	Ile	Leu	Ala	Thr	Val
	50					55					60				
Pro	Ser	Asp	Cys	Asn	Met	Ser	Gly	Met	Pro	Glu	Cys	Val	Cys	Pro	Ala
	65				70					75				80	
Asp	Pro	Phe	Phe	Ser	Ser	Val	Lys	Ala	Lys	Glu	Lys	Ile	Thr	Pro	Asp
			85						90					95	
Glu	Phe	Lys	Glu	Ile	Ser	Ile									
			100												

<210> 7360

<211> 446

<212> PRT

<213> B.fragilis

<400> 7360

Asn	Ile	Thr	Tyr	Gly	Thr	Thr	Ala	Asn	Gly	Tyr	Ser	His	Thr	Gly	Tyr
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Ile	Ser	Ala	Lys	Pro	Ile	Glu	Leu	Phe	Gly	Arg	Cys	Lys	Thr	Asn	Thr
			20					25					30		
Thr	Asn	Gly	Lys	Ser	Glu	Cys	Ser	Asp	Lys	Leu	Gln	Asn	Leu	Asp	Lys
		35					40					45			
Ser	Arg	Asn	Leu	Lys	Asp	Ser	Trp	His	Ile	Leu	Ser	Phe	Leu	Cys	Ala
	50					55					60				
Lys	Lys	Gln	Ile	Ile	Pro	Gln	Glu	Ser	Val	Asn	Leu	Phe	Leu	Glu	Asn
65				70					75					80	
Cys	Lys	Asn	Thr	Lys	Met	Lys	Ile	Thr	Ile	Val	Ala	Gly	Ala	Arg	Pro
			85					90					95		
Asn	Phe	Met	Lys	Ile	Ala	Pro	Ile	Thr	Arg	Ala	Ile	Asp	Ala	Ala	Lys
			100					105					110		
Ala	Gln	Gly	Lys	Arg	Ile	Ser	Tyr	Arg	Leu	Val	Tyr	Thr	Gly	Val	Glu
		115					120					125			
Asn	Asp	Asn	Ser	Leu	Asp	Ala	Ser	Leu	Phe	Ala	Asp	Leu	His	Met	Lys
	130					135					140				
Ala	Pro	Asp	Ala	Tyr	Leu	Gly	Val	Asn	Gly	Asn	Asn	Pro	Thr	Glu	Leu
145				150					155					160	
Thr	Ala	Gly	Ile	Met	Ile	Ala	Phe	Glu	Arg	Glu	Leu	Thr	Glu	Asn	Pro
			165					170					175		
Thr	His	Val	Val	Leu	Val	Val	Asp	Asp	Leu	Thr	Ala	Thr	Met	Ser	Cys
		180					185						190		
Ala	Ile	Val	Ala	Lys	Lys	Gln	Asn	Ile	Lys	Val	Ala	His	Leu	Val	Ala
	195						200					205			
Gly	Thr	Arg	Ser	Phe	Asp	Met	Ser	Met	Pro	Lys	Glu	Ile	Asn	Arg	Met
	210				215				220						
Ile	Thr	Asp	Gly	Leu	Ser	Asp	Tyr	Leu	Phe	Thr	Ala	Gly	Met	Val	Ala
225				230					235					240	
Asn	Arg	Asn	Leu	Asn	Gln	Thr	Gly	Thr	Glu	Asn	Glu	Thr	Val	Tyr	Tyr
			245					250						255	
Val	Gly	Asn	Ile	Leu	Ile	Asp	Thr	Ile	Arg	Tyr	Asn	Arg	Asn	Arg	Leu
		260					265					270			
Ile	Lys	Pro	Val	Trp	Phe	Ser	Val	Leu	Gly	Leu	Lys	Glu	His	Glu	Tyr
	275						280					285			
Ile	Leu	Leu	Thr	Leu	Asn	Arg	His	Val	Leu	Leu	Asn	Asn	Lys	Glu	Asn
	290				295						300				
Leu	Gln	Glu	Leu	Met	Glu	Thr	Leu	Leu	Lys	Lys	Ala	Asn	Gly	Met	Pro
305				310					315					320	
Ile	Val	Ala	Pro	Leu	His	Thr	Tyr	Val	Arg	Asp	Ala	Ile	Lys	Ala	Leu

325 330 335
 Gly Ile Thr Ala Pro Asn Leu His Ile Met Pro Thr Gln Ser Tyr Leu
 340 345 350
 Ser Phe Gly Tyr Leu Met Asn Gln Ala Lys Ala Ile Val Thr Asp Ser
 355 360 365
 Gly Asn Val Ala Glu Glu Ala Thr Phe Leu Gly Ile Pro Cys Ile Thr
 370 375 380
 Leu Asn Thr Phe Ala Glu His Pro Glu Thr Trp Arg Thr Gly Thr Asn
 385 390 395 400
 Glu Leu Val Gly Glu Asp Pro Ala Ala Leu Gly Ala Cys Met Asp Lys
 405 410 415
 Leu Met Asn Gly Glu Trp Lys Gln Gly Thr Leu Pro Glu Arg Trp Asp
 420 425 430
 Gly Arg Thr Ala Glu Arg Ile Val Gln Ile Leu Leu Gly Glu
 435 440 445

<210> 7361
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 7361

Met Ala Ile Glu Asn Thr Glu Gly Tyr Pro Leu Ile Ser Trp Arg Ala
 1 5 10 15
 Ser Ile Ile Lys Thr Lys Tyr Met Asn Thr Gln Arg Gln Thr Gly Thr
 20 25 30
 Cys Arg Ser Leu Ser Gly His Ala Gln Arg His Gly Arg Glu Val Arg
 35 40 45
 Pro Ser Tyr Glu Ile Ser Thr Ser Gln Phe Ser Asp Met Lys Val Arg
 50 55 60
 Arg Leu Thr Arg Asn Tyr Gly Phe Gly Gly Tyr Ser Ile Tyr Arg Tyr
 65 70 75 80
 Leu Val Ser Glu Ala Leu Tyr Lys Gly Glu Tyr Phe Leu Pro Trp Cys
 85 90 95
 Glu Glu Thr Ala Arg Ala Val Ala Ser Tyr Trp Asn Ala Ser Leu Glu
 100 105 110
 Asp Ile Thr Arg Ile Val Asp Gly Cys Val Gln Val Gly Leu Phe Asn
 115 120 125
 Asp Glu Leu Tyr Arg Lys His Gly Val Leu Thr Ser Ala Ala Ile Gln
 130 135 140
 Gln Asp Tyr Leu Lys Leu Cys Gly Met Gly Tyr Ile Gln Glu Glu Phe
 145 150 155 160
 Ala Leu Ser Ala Ser
 165

<210> 7362
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 7362

Asn Ser Leu Glu Met Lys Ile Thr Ile Ser Glu Lys Val Glu Gln Phe
 1 5 10 15
 Ile Ser Glu Arg Thr Asp Lys Ala Gly Tyr Tyr Glu Tyr Ile Asp
 20 25 30
 Val Ile Ala Gln Lys His Ala Leu Glu Ala Ala Glu Met Val Lys Gln
 35 40 45
 Glu Thr Lys Glu Lys Cys Gln Ile Ala Phe Arg Asn Phe Met Leu Arg
 50 55 60

Ala Thr Leu Ala Asn Val Ser Gly Glu Ser Leu Asp Phe Glu Lys Glu
 65 70 75 80
 Phe Ala Asp Thr Met Ser Gln Ile
 85

<210> 7363

<211> 320

<212> PRT

<213> B.fragilis

<400> 7363

Phe Val Leu Glu Thr Leu Lys Arg Glu Phe Phe Glu Asn Tyr Asn Asn
 1 5 10 15
 Tyr Met Leu Met Thr Ser Gln Glu Ala Asn Ser Ile Pro Leu Glu Asp
 20 25 30
 Ile Leu Ser Arg Tyr Gly Tyr Glu Pro Ser Arg Arg Tyr Gly Gly Tyr
 35 40 45
 Asp Met Tyr Arg Ser Pro Phe Arg Cys Asp Ser Ser Pro Ser Phe Lys
 50 55 60
 Val Phe Arg Asn Glu Asn Arg Trp Tyr Asp Phe Gly Asp Ser Ser His
 65 70 75 80
 Gly Arg Val Val Asp Leu Val Met Arg Ile Gln Asn Cys Ser Phe Pro
 85 90 95
 Gln Ala Met Lys Glu Ile Glu Gly Leu Gly Phe Ser Ser Gly Met Ile
 100 105 110
 Pro Gln Pro Arg Pro Val Thr Val Thr Val Gln Lys Ala Ser Gly Met
 115 120 125
 Thr Leu Leu Lys Ile Ile Pro Val Glu Asn Gly His Leu Leu Asp Tyr
 130 135 140
 Ala Ala Ser Arg Gly Ile Asp Ala Asp Ile Val Arg Glu His Cys Val
 145 150 155 160
 Glu Val His Tyr Cys Phe Glu Lys Asn Pro Arg Glu Lys Tyr Ala Leu
 165 170 175
 Gly Phe Ala Asn Asp His Gly Gly Phe Glu Leu Arg Asn Ser Met Phe
 180 185 190
 Lys Gly Cys Ala Thr Ala Lys Asp Ile Thr Gly Leu Ala Ala Gly Asn
 195 200 205
 Arg Ser Cys Ala Val Phe Glu Gly Phe Phe Asp Leu Leu Ser Phe Lys
 210 215 220
 Gln Tyr Ala Lys Asp His Pro Gln Met Pro Ala Leu Arg Lys Leu Asp
 225 230 235 240
 Leu Cys Val Leu Asn Ser Thr Ser Ile Val Glu Arg Ser Lys Asp Phe
 245 250 255
 Leu Ser Arg Tyr Glu Lys Val His Ala Phe Leu Asp Asn Asp Ser Pro
 260 265 270
 Gly Arg Glu Ala Leu Arg Lys Met Arg His Phe Leu Pro Lys Asp Thr
 275 280 285
 Val Phe Val Asn Glu Ala Glu Arg Leu Tyr Pro Ser Cys Asn Asp Phe
 290 295 300
 Asn Glu Phe Leu Gln Lys Ile Lys Cys Pro Ala Ser Gly Arg Glu Met
 305 310 315 320

<210> 7364

<211> 731

<212> PRT

<213> B.fragilis

<400> 7364

Asp Glu Val Cys Met Lys Gln Gln Tyr Ser Lys Leu Leu Leu Val Ile

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475	476	477	478	479	480

Gly Thr Arg Phe Arg Leu Ser Gly Met Thr Thr Ala Lys Leu Asn Pro
 485 490 495
 His Trp Phe Phe Asn Gly Tyr Gly Ala Tyr Gly Leu Lys Asp Lys Lys
 500 505 510
 Trp Lys Tyr Glu Gly Asn Val Thr Tyr Ser Phe Arg Lys Cys Glu Phe
 515 520 525
 Phe Pro Trp Glu Phe Pro Lys His Tyr Ile Ser Ala Ser Tyr Arg Tyr
 530 535 540
 Asp Val Met Ser Pro Met Asp Lys Phe Leu Asp Thr Asp Lys Asp Asn
 545 550 555 560
 Val Phe Val Ala Trp Lys Thr Thr Thr Val Asp Gln Met Ser Tyr Val
 565 570 575
 Arg Asp Ala Thr Leu Arg Tyr Glu Met Glu Thr Leu Ser Gly Phe Ser
 580 585 590
 Val Ala Ala Met Ala Arg His Arg Lys Asp Thr Pro Ala Gly Lys Leu
 595 600 605
 Gln Tyr Ile Arg Asn Asp Ala Ala Lys Thr Ile Val Pro Asp Ile Thr
 610 615 620
 Thr Ala Glu Leu Gly Leu Thr Leu Arg Tyr Ala Pro Gly Glu Thr Phe
 625 630 635 640
 Val Asn Thr Lys Gln Arg Arg Arg Pro Val Ser Leu Asp Ala Pro Ile
 645 650 655
 Phe Thr Leu Ser His Thr Thr Gly Phe Lys Gly Val Leu Gly Gly Glu
 660 665 670
 Tyr Asn Phe Asn Leu Thr Glu Ala Ser Ile Trp Lys Arg Phe Trp Leu
 675 680 685
 Ser Ser Trp Gly Lys Val Asp Val Thr Leu Lys Gly Gly Ala Gln Trp
 690 695 700
 Asn Thr Val Pro Phe Pro Leu Leu Ile Leu Pro Ala Ala Asn Leu Ser
 705 710 715 720
 Tyr Ile Thr Gln Lys Glu Thr Phe Asn Leu Ile
 725 730

<210> 7365

<211> 110

<212> PRT

<213> B.fragilis

<400> 7365

Leu Ile Pro Ile Gln Met Ser Lys Ile Glu Asp Leu Val Lys Trp Lys
 1 5 10 15
 Thr Val Glu Thr Val Thr Pro Asn Tyr Pro Asp Gly Val Ile Phe Ile
 20 25 30
 Lys Glu Asp Thr Ser Val Glu Phe Pro Leu Ala Met Val Ala Phe Pro
 35 40 45
 Leu Gly Gly His Glu Asn Gly Thr Lys Lys Gln Arg Glu Arg Ala Lys
 50 55 60
 Leu Ile Ala Ala Ala Pro Glu Leu Leu Asn Ala Leu Gln Gly Met Leu
 65 70 75 80
 Glu Arg Phe Asp Tyr Asn Asp Gln Ala Ile Tyr Ser Phe Ala Thr Lys
 85 90 95
 Glu Ile Asp Ala Ala Lys Ala Ala Ile Lys Lys Ala Ile Glu
 100 105 110

<210> 7366

<211> 179

<212> PRT

<213> B.fragilis

<400> 7366

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Ile Leu His Met Gly His Pro Thr Met Gln Glu Asn Asp Thr Ala Lys
1          5          10          15
Leu Thr Pro Thr Arg Ile Met Leu Leu Ile Leu Phe Ile Ala Gly Thr
          20          25          30
Gly Ile Phe Thr Leu Gln Ala Gln Asn Arg Glu Glu Arg Lys Glu Leu
          35          40          45
Lys Glu Gln Thr Val Lys Glu Lys Ile Glu Ser Glu Asn Tyr Arg Ile
          50          55          60
Asp Ile Asn Thr Ala Tyr Pro Arg Arg Gly Arg Met Ile Pro Leu Thr
          65          70          75          80
Ser Ile Tyr Ser Val Thr Ile Arg Asn Asp Ser Val Phe Ser Gln Leu
          85          90          95
Pro Tyr Phe Gly Arg Ala Tyr Ser Ile Pro Tyr Gly Gly Gly Gln Gly
          100          105          110
Leu Met Phe Asn Ala Pro Ile Asp Gln Tyr Thr Met Ala Met Gly Lys
          115          120          125
Arg Gly Ala Ala Lys Ile Asn Phe Thr Ala Lys Ser Pro Glu Asp Gln
          130          135          140
Phe Arg Phe Arg Ile Thr Ile Tyr Ser Asn Gly Ser Ser Ser Ile Asp
          145          150          155          160
Val Asp Met Gln Asn Arg Glu Ser Ile Ser Phe Ser Gly Asp Leu Ile
          165          170          175
Leu Pro Glu

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<210> 7367

<211> 65

<212> PRT

<213> B.fragilis

<400> 7367

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Arg Ile Asn Met Ala Trp Met Val Thr Gln Lys Asn Ile Lys Ile His
1          5          10          15
Thr Cys Ile Asp Gly Ile Asp Ser Val Glu Asp Val Arg Val Ile Ile
          20          25          30
Ser His Lys Lys Leu Lys Ala Leu Gly Ala Lys Arg Arg Val Tyr Lys
          35          40          45
Asp Thr Arg Glu Ser Phe Phe Leu Ile Glu Ser Asp Cys Glu Ile Ile
          50          55          60
Leu
65

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<210> 7368

<211> 104

<212> PRT

<213> B.fragilis

<400> 7368

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Lys Leu Leu Val Arg Asn Val Glu Phe Ile Lys Thr Arg Glu Arg Ala
1          5          10          15
Phe Phe Leu Leu Asn Pro Ile Val Lys Ser Ser Ser Lys Leu Glu Gly
          20          25          30
Met Lys Lys Tyr Leu Ala Ile Glu Ile Arg Gly Glu Ile Phe Val Met
          35          40          45
Asn Asp Asn Asp Glu Leu Gly Gly Leu Ile Asp Asn Asp Val Pro Phe
          50          55          60
Thr Val Ile Gly His Val Cys Thr Glu Glu Cys Asn Thr Thr Cys Leu
          65          70          75          80

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His Tyr Arg Gln Gly Thr Cys Pro Cys Lys Ile Met Lys Asp Thr Phe
 85 90 95
 Gly Lys Val Ile His Val Phe Val
 100

<210> 7369
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 7369
 Ala Val Thr Ala Cys Arg Arg Glu Cys Glu Asn Lys Gln Thr Ile Lys
 1 5 10 15
 Asn Pro Ile Leu Ile Lys Met Glu Ile Arg Gly Lys Ile Ile Ala Val
 20 25 30
 Leu Pro Val Lys Asp Gly Ile Gly Lys Thr Thr Gly Asn Glu Trp Lys
 35 40 45
 Ser Arg Glu Phe Val Leu Glu Thr Glu Glu Ser Lys Pro Gln Ser Val
 50 55 60
 Cys Leu Gln Leu Met Asn Ala Asn Ile Glu Arg Tyr Ala Val Glu Val
 65 70 75 80
 Gly Met Thr Val His Val Lys Phe Asp Ile Ser Ala Arg Gln Trp Glu
 85 90 95
 Asn Arg Trp Phe Asn Thr Leu Thr Ala Trp Glu Val Thr Val Ile Lys
 100 105 110
 Gln Lys Glu Glu Gln Pro Ala
 115

<210> 7370
 <211> 577
 <212> PRT
 <213> B.fragilis

<400> 7370
 Ala Leu Trp Arg Pro Cys Ile Gln Lys Leu Trp Leu Ala Phe Pro Ser
 1 5 10 15
 His Pro Gly Ser Gly Glu Ser Gly Val Pro Val Leu Thr Phe Lys Lys
 20 25 30
 Met Arg Lys Thr Arg Arg Ile Ile Pro Phe Val Phe Cys Gly Leu Leu
 35 40 45
 Ile Ser Cys Thr Thr Glu Arg Arg Leu Ala Arg Val Arg Ile Ser Gln
 50 55 60
 Pro Gln Met Lys Glu Thr Val Ala Asp Thr Gly Lys Gln Leu Pro Gly
 65 70 75 80
 Gln Ile Ala Trp Thr Asp Asp Lys Gly Glu Glu His Leu Val Lys Gln
 85 90 95
 Val Ser His Asp Ser Val Thr Gly Glu Asn Met Thr Leu Ile Glu Leu
 100 105 110
 Ser Glu Val Thr Val Met Ala Lys Ser Lys Gln Val Ala Glu Arg Asn
 115 120 125
 Gly Lys Ile Asn Leu Asp Phe Leu Val Thr Val Pro Gly Glu Leu Ile
 130 135 140
 Asn Asn Lys Trp Gln Val Gln Leu Thr Pro Val Ala Tyr Lys Pro Ser
 145 150 155 160
 Asp Thr Leu Tyr Leu Asp Lys Ile Phe Leu Ser Gly Ala Asp Phe Ala
 165 170 175
 Lys Met Gln Glu Lys Gly Tyr Met Arg Tyr Arg Ala Phe Met Asn Ser
 180 185 190
 Ile Ile Pro Asp Ser Leu Tyr Met Gln Arg Leu Leu Asp Ser Lys Gly

195 200 205
 Tyr Lys Lys Ala Leu Ala Glu Leu Glu Glu Glu Tyr Phe Gln Ala Trp
 210 215 220
 Lys His Glu Val Ile Ala Lys Glu Arg Trp Val Asp Trp Ser Asp Lys
 225 230 235 240
 Thr Asn Ala Arg Phe Ala Leu Phe Asn Tyr Lys Met Glu Arg Asn Arg
 245 250 255
 Gln Ala Ile Ala Gly Tyr Asn Ser Ile Leu Glu Tyr Leu Pro Ala Tyr
 260 265 270
 Trp Met Arg Arg Glu Ile Asp Gly Lys Tyr Ile Pro Ser Lys Trp Lys
 275 280 285
 Met Phe Ala Glu Gly Asn Tyr Lys Ile Arg Thr Arg Ser Ile Thr Pro
 290 295 300
 Glu Asp Ser Ala Ala Ile Thr Glu Arg Phe Thr Asp Tyr Lys Lys Ile
 305 310 315 320
 Ala Glu Asn Gln Lys Arg Lys Glu Gln Ala Gly Ala Met Tyr Glu Lys
 325 330 335
 Tyr Val Arg Phe Pro Tyr Glu Pro Ala Arg Leu Asp Thr Val Ile Lys
 340 345 350
 Gln Gly Asn Ser Phe Val Tyr Tyr Tyr Lys Gln Glu Leu Pro Ala Thr
 355 360 365
 Glu Asn Thr Lys Lys Ile Glu Leu Thr Leu Asp Gly Gln Ile Leu Ser
 370 375 380
 Arg Asp Glu Val Arg Thr Gln Leu Pro Pro Ser Asp Thr Ile Thr Tyr
 385 390 395 400
 Tyr Ile Ser Ser Met Val Gln Phe Leu Asp Arg Thr Pro Arg Tyr Arg
 405 410 415
 Lys Lys Ile Ile Thr Arg Lys Asp Glu Val Ser Leu Arg Ala Tyr Val
 420 425 430
 Thr Tyr Lys Ser Gly Ser Thr Gly Phe Asp Glu Lys Thr Gly Asn Asn
 435 440 445
 Lys Ala Glu Ile Asp Lys Val Phe Glu Thr Ile Arg Gly Ile Asn Tyr
 450 455 460
 Thr Gly Glu Phe Leu Ile Asp Ser Ile Arg Met Thr Ala Thr Ser Ser
 465 470 475 480
 Pro Glu Gly Ser Ser Glu Met Asn Leu Phe Leu Ser Arg Glu Arg Ala
 485 490 495
 Leu Ala Leu Lys Lys Tyr Leu Ala Ala Arg Thr Glu Asp Arg Glu Gly
 500 505 510
 Val Asp Thr Leu Phe Arg Pro Arg Trp Thr Gly Glu Glu Trp Ser Arg
 515 520 525
 Leu His Glu Leu Val Leu Ser Asp Asp Ser Leu Ala Asn Lys Ala Gly
 530 535 540
 Ile Leu Arg Ile Leu Lys Glu Thr Lys Asn Pro Asp Ser Arg Glu His
 545 550 555 560
 Ala Leu Arg Glu Tyr Ala Ser Asp Tyr Lys Arg Ile Arg Glu Arg Val
 565 570 575
 Phe

<210> 7371

<211> 118

<212> PRT

<213> B.fragilis

<400> 7371

Ala Lys Gly Gly Thr Ala Gly Met Lys Lys Arg Ser Phe Leu Leu Gly
 1 5 10 15
 Ser Leu Leu Ala Phe Thr Leu Gly Val Ser Ala Gln Ser Tyr Ser Leu

20 25 30
 Arg Thr Asn Val Leu Gly Leu Ala Thr Thr Asn Leu Asn Leu Glu Ala
 35 40 45
 Ser Met Thr Leu Gly Arg Lys Trp Ser Leu His Leu Pro Val Gln Tyr
 50 55 60
 Asn Pro Phe Arg Phe Ser Arg Asn Arg Gln Phe Arg Asn Leu Tyr Val
 65 70 75 80
 Ala Pro Gly Val Arg Tyr Trp Leu Leu Glu Ser Tyr Met Gly Pro Phe
 85 90 95
 Ile Gly Met His Gly Thr Ala Gly Tyr Ile Gln Cys Gly Gln Pro Leu
 100 105 110
 Arg Gln Gln Val Pro Leu
 115

<210> 7372
 <211> 109
 <212> PRT
 <213> B.fragilis

<400> 7372
 Arg His Met Gly Tyr Val Ser Ile Lys Arg Gly Tyr Cys Arg Ser Gln
 1 5 10 15
 Lys Tyr Arg Asn Lys Tyr Ile Arg Trp Tyr Phe Glu Gly Val Thr Pro
 20 25 30
 Gly Leu Arg Gly Gln Phe Glu Ala Met Arg Ser Thr Ser Ala Glu Glu
 35 40 45
 Val Arg Val Ala Ala Leu Val His Cys His Asn Ala Val Ile Asp Arg
 50 55 60
 Tyr Leu Val Thr Ile Gly Met Cys Ser Ala Lys Val Gln Pro Arg Asn
 65 70 75 80
 Thr Lys Thr Asp Tyr Ser Ala Tyr His Ser Gly Met Asp Asp Gly Arg
 85 90 95
 Ser Ile Ser Leu His Arg Gln Ile Asn Gly Gly Asn Val
 100 105

<210> 7373
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 7373
 Arg Met Lys Gly Thr Tyr Trp Tyr Ala Val Asp Tyr Ala Gly Thr Gly
 1 5 10 15
 His Leu Phe Thr Tyr Lys Pro Glu Arg Asp Ala Gly Ile Trp Asn Gly
 20 25 30
 Glu Glu Ala Leu Gln Val Ser Gln Gly Ala Leu Arg Glu Val Phe Pro
 35 40 45
 Lys Ile Thr Trp Gln Asp Ser Pro Val Val Val Thr Leu Glu Val Leu
 50 55 60
 Pro Cys Glu Glu Thr Phe Arg Leu Arg Leu Ser Lys Asn Cys Gly Tyr
 65 70 75 80
 Ile Leu Arg Lys Tyr Leu Arg Phe Pro Arg Glu Gly Lys Asn Lys
 85 90 95

<210> 7374
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 7374

Arg Lys Lys Gly Asn Gly Glu Ile Lys Gly Arg Gly Trp Lys Met Gly
 1 5 10 15
 Met Arg Trp Phe Gln Gly Gly Phe Gly Ser Lys Leu Ser Trp Trp Glu
 20 25 30
 Lys Gly Gly Gly Asn Glu Gly Glu Ala Glu Lys Arg Lys Ile Lys Met
 35 40 45
 Ala Trp Ile Cys Glu Pro Val Thr Val Gln Asn Asn Ile
 50 55 60

<210> 7375

<211> 73

<212> PRT

<213> B.fragilis

<400> 7375

Val His Arg Ile Tyr Ile Ser Pro Thr Ile Gly Val Pro Asp Met Lys
 1 5 10 15
 Lys Lys Ser Glu Lys Gln Asn Met Asn Val Lys Asn Met Asn Lys Ile
 20 25 30
 Asn Thr Glu Lys Ser Pro Ala Ile Thr Leu Asn Asn Arg Arg Leu His
 35 40 45
 Lys Gln Asn Lys Gln Tyr Ile Ala Leu Ser Ser Gln Thr Lys Leu Thr
 50 55 60
 Lys Thr Leu Asn Ile Arg Ile Gln Ile
 65 70

<210> 7376

<211> 138

<212> PRT

<213> B.fragilis

<400> 7376

Thr Val Asp Val Ser Arg Gly Glu Trp Arg Tyr Arg Ile Lys Asp Arg
 1 5 10 15
 Asn Pro Leu Asn Asn Ser His Met Tyr Phe Ile His Tyr Ile Gln Thr
 20 25 30
 Tyr Ala Ser Val Asn Arg Lys Gly Ser Glu Leu Gln Glu Tyr Val Leu
 35 40 45
 Gln Leu Lys Asp Ser Leu Ile Lys Asp Arg Glu Val Leu Asp Asp Leu
 50 55 60
 Lys Glu Glu Leu His Cys Arg Ile Gly Glu Leu Asp Ala Lys Tyr Pro
 65 70 75 80
 Arg Thr Gln Pro Leu His Leu Asp Ala Ala Ser Gly Arg Asp Ser Ile
 85 90 95
 Gln Trp Ile Ile His Val Lys Gly Lys Pro Asp Asn Leu Ile Cys Ile
 100 105 110
 Ile Ser Ile Thr Lys Val Arg Asn Leu Leu Gly Glu Gly Thr Gly Phe
 115 120 125
 Phe Leu Gly Glu Lys Thr Gly Gly Lys Glu
 130 135

<210> 7377

<211> 432

<212> PRT

<213> B.fragilis

<400> 7377

Leu Lys Tyr Lys Cys Lys Arg Ile Ser Leu Asn Ser Tyr Leu Leu Val

1	5	10	15
Arg Lys Leu Phe	Glu Ala Ile Phe	Arg Leu Pro Tyr Ser	Val Leu Leu
	20	25	30
Phe Ala Ser His	Thr Leu Arg Gly	Ile Pro Ile Ile	Ala Arg Thr Tyr
	35	40	45
His Ala Cys Arg	Leu Thr Asn Gly	Ile Thr Leu Glu	Leu Ala Val Leu
	50	55	60
His Leu Thr Asp	Asp Thr Ile Ile	Val Leu His Tyr	Asp Lys Phe Ala
	65	70	75
Gln Thr Phe Pro	Ser Ile Glu Ser	Ala Leu Arg Cys	His Val Gly Ile
	85	90	95
Val Gly Gln Lys	Leu His Ser Arg	Phe Arg Ile Leu	Leu Val Gln Leu
	100	105	110
Asn Ser Asn Cys	Phe Asn Thr Phe	Leu Cys Leu Val	Glu Gly Gly Phe
	115	120	125
Lys Phe Val Leu	Arg Ser Thr Tyr	Ile Ala Asp His	Gln Ile Val Ala
	130	135	140
Gly Ile Tyr His	Val Gly His Pro	Val Glu Asn Pro	Lys Ser Gly Val
	145	150	155
Pro Gly Glu Gly	Asp Val Ile Gly	Thr Val Tyr Thr	Arg Ile Ala Tyr
	165	170	175
Arg Ser Phe Gly	Ser Thr Thr Ile	Tyr Gly Ser Glu	Asn Ser His Val
	180	185	190
Gly Ile Ile Arg	Thr Lys Pro Lys	His Thr Ala Tyr	Ser Ile Gly Lys
	195	200	205
Ile Gly Thr His	Leu Ser His Lys	Asn Glu Thr Ala	Leu Leu Cys Arg
	210	215	220
Asp Gly Thr Leu	Ile Glu Ile Leu	Leu Val Ala Tyr	Leu Glu Ser Gln
	225	230	235
Arg Arg Glu Ala	Val Arg Cys Phe	Ile Arg Ser Gly	Thr Lys Ile Ile
	245	250	255
Ala Asp Val Glu	Gly Gly Ser Phe	Ile Met Val Ala	His Gly Ile Leu
	260	265	270
Tyr Ile Leu Asn	Gly Glu Phe Ala	Phe Arg Leu Tyr	Glu Gln Arg His
	275	280	285
Arg Val Ile Gly	Leu Ser Leu Asp	Ile Arg Gln Ile	Gly Phe Thr Leu
	290	295	300
Val Gly Lys His	Ile Glu Val Ala	Pro His Thr Gly	Phe Thr Glu Thr
	305	310	315
Ala Gly Thr Glu	Ile Glu Arg Cys	Ile Ser Ile Gly	Lys Ala Glu Val
	325	330	335
Phe Val His Thr	Ala Glu Ile Ser	Phe Phe Ala Gly	Lys Arg Asn Asn
	340	345	350
Val Ile Arg Ile	His Ala Val Gly	Leu Val Ser His	Ile Glu Leu Met
	355	360	365
Asp Ala Arg Leu	Val Gly Met Cys	Arg Asn Ala Val	Val Arg His Ser
	370	375	380
Asp Ser Tyr Pro	Tyr Gly Ser Pro	Asp Ala Gly Thr	Phe Thr Tyr His
	385	390	395
Leu His Asn Pro	Tyr Phe Ile Gly	Ile Gly Asn Gly	Glu Asp Ser Pro
	405	410	415
Cys Cys Asn Ile	Arg Ile Pro Ala	Pro Val Gln Cys	Leu His Arg Gly
	420	425	430

<210> 7378

<211> 763

<212> PRT

<213> B.fragilis

<400> 7378

Asn	Leu	His	Lys	Gly	Met	Lys	Asn	Asn	Thr	Leu	Ser	Gly	Ala	Tyr	Tyr
1				5					10					15	
Pro	Lys	Asn	Pro	Gln	Ile	Lys	His	Phe	Phe	Arg	Ile	Met	Arg	Ile	Thr
			20					25					30		
Leu	Phe	Leu	Leu	Met	Ala	Cys	Val	Phe	Ser	Leu	Tyr	Ala	Gly	Asn	Ser
		35					40					45			
Tyr	Ser	Gln	Asn	Thr	Arg	Val	Ser	Phe	Ala	Met	Asp	Asn	Val	Gly	Leu
	50					55					60				
Asn	Lys	Val	Leu	Glu	Glu	Ile	Glu	Ser	Gln	Thr	Asp	Tyr	Leu	Phe	Ile
65					70					75					80
Tyr	Asn	Ser	Gln	Ile	Asn	Val	Asn	Lys	Leu	Val	Thr	Ile	Lys	Ala	Asn
				85					90					95	
Lys	Gln	Thr	Val	Ser	Lys	Val	Leu	Asp	Gln	Ile	Leu	Gln	Asn	Thr	Gly
			100					105					110		
Ile	Glu	Tyr	Lys	Leu	Glu	Gly	Ser	His	Ile	Ile	Leu	Glu	Lys	Lys	Val
	115						120					125			
Glu	Glu	Val	His	Asn	Ser	Ser	Ser	Ala	Val	Gln	Gln	Gln	Gln	Thr	Lys
	130					135						140			
Lys	Ile	Thr	Gly	Lys	Val	Val	Asp	Lys	Thr	Gly	Glu	Ala	Ile	Ile	Gly
145					150					155					160
Ala	Asn	Val	Lys	Ile	Gln	Gly	Thr	Asp	Lys	Gly	Thr	Ile	Thr	Asp	Leu
				165					170					175	
Asp	Gly	Asn	Phe	Ile	Leu	Glu	Val	Ala	Pro	Lys	Asp	Val	Leu	Val	Ile
			180					185					190		
Ser	Tyr	Ile	Gly	Tyr	Leu	Asp	Thr	Lys	Val	Pro	Ile	Ala	Gly	Gln	Lys
		195					200					205			
Gln	Ile	His	Val	Val	Leu	Ser	Glu	Asp	Asn	Lys	Met	Leu	Asp	Glu	Val
	210					215					220				
Val	Val	Ile	Gly	Tyr	Gly	Thr	Thr	Ser	Thr	Arg	Lys	Met	Ala	Ser	Ala
225					230					235					240
Val	Thr	Ala	Val	Lys	Gly	Glu	Lys	Leu	Gln	Asp	Leu	Pro	Phe	Asn	Ser
				245					250					255	
Val	Ala	Ala	Ser	Leu	Ala	Gly	Arg	Ala	Thr	Gly	Val	Ile	Val	Gln	Ser
		260					265						270		
Ser	Gly	Gly	Glu	Pro	Gly	Ser	Ala	Pro	Ser	Ile	Ser	Ile	Arg	Gly	Gly
		275					280					285			
Gly	Ala	Pro	Val	Tyr	Val	Ile	Asp	Gly	Val	Ile	Ser	Asp	Ala	Trp	Asp
	290					295					300				
Phe	Asn	Thr	Leu	Asn	Pro	Asn	Asp	Ile	Glu	Ser	Leu	Ser	Ile	Leu	Lys
305					310					315					320
Asp	Ala	Ala	Ser	Leu	Ala	Val	Tyr	Gly	Ser	Arg	Ala	Ala	Asn	Gly	Ile
				325					330					335	
Val	Met	Val	Lys	Thr	Lys	Gln	Gly	Gly	Lys	Gly	Lys	Thr	Ala	Val	Asn
			340					345					350		
Tyr	Thr	Phe	Asn	Ala	Glu	Phe	Ser	Gln	Pro	Thr	Lys	Leu	Leu	Lys	Lys
		355					360					365			
Thr	Arg	Gly	Tyr	Asp	Tyr	Ala	Tyr	Asn	Gln	Met	Leu	Ala	Gly	Ile	Asn
	370					375					380				
Asp	Gly	Leu	Asp	Glu	Ala	Asp	Leu	Pro	Phe	Asn	Gln	Glu	Val	Leu	Asp
385					390					395					400
Ile	Ile	Lys	Asn	Gln	Ser	Asp	Pro	Tyr	Thr	Ser	Gly	His	Ala	Asp	Thr
				405					410					415	
Asp	Trp	Leu	Gly	Gly	Leu	Lys	Thr	Val	Ala	Pro	Gln	Tyr	Lys	His	
		420					425					430			
Thr	Val	Ser	Leu	Ser	Gly	Ser	Gly	Asn	Lys	Val	Asn	Tyr	Tyr	Ile	Ser
		435					440					445			
Leu	Gly	Met	Leu	Asn	Gln	Gly	Ser	Ile	Tyr	Thr	Ser	Asn	Ala	Leu	Asn
	450					455					460				

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64
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 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240
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 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272
 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288
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 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320
 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336
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 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432
 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448
 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464
 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480
 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496
 497 498 499 500

Tyr Asp Arg Tyr Thr Val Arg Ser Asn Val Asn Thr Thr Phe Asp Lys
 465 470 475 480
 Ile Gly Leu Lys Val Ser Leu Asn Leu Asn Gly Ala Tyr Glu Lys Lys
 485 490 495
 Glu Tyr Pro Ser Phe Ser Ala Ala Lys Ile Trp Glu Asp Leu Tyr Asn
 500 505 510
 Gln Ser Pro Leu Asn Pro Ala Tyr Asn Lys Asp Gly Thr Tyr Ala Ala
 515 520 525
 Val Thr Asp His Pro Leu Ala Glu Met Asp Lys Arg Ser Gly Tyr Asn
 530 535 540
 Arg Asn Tyr Gly Lys Phe Ile Asn Thr Gln Val Ala Ala Asp Trp Thr
 545 550 555 560
 Leu Pro Trp Leu Lys Glu Leu Thr Leu Gly Ala Met Phe Asn Tyr Arg
 565 570 575
 Leu Asn Asp Ser His Val Lys Lys Phe Ser Thr Lys Ala Pro Gln Tyr
 580 585 590
 Tyr Ala Asp Gly Ala Val Tyr Pro Ile Gly Lys Pro Thr Leu Asn Glu
 595 600 605
 Glu Gly Tyr Trp Gly Glu Ser Tyr Asn Phe Glu Val Ser Ala Ala Tyr
 610 615 620
 Val Lys Thr Phe Ala Glu Lys His Thr Ile Asp Ala Lys Phe Val Tyr
 625 630 635 640
 Asn Val Ala Glu Asn Thr Gly Trp Asn Phe Asn Ala Tyr Cys Gly Glu
 645 650 655
 Tyr Leu Ser Thr Val Val Asp Gln Leu Phe Ala Gly Ala Ala Tyr Thr
 660 665 670
 Gln Gln Asn Gly Gly Tyr Ser Asp Glu Arg Gly Arg Met Gly Leu Val
 675 680 685
 Gly Leu Leu Lys Tyr Asp Phe Met Asn Arg Asn Ile Val Glu Gly Ser
 690 695 700
 Phe Arg Tyr Tyr Gly Ser Asp Asn Phe Thr Pro Arg His Arg Trp Gly
 705 710 715 720
 Phe Phe Pro Ser Gly Ala Glu Ala Trp Ala Ile Ser Glu Glu Pro Phe
 725 730 735
 Phe Lys Glu Trp Glu Gln His Val Phe Asn Leu Leu Lys Leu Arg Pro
 740 745 750
 Phe Leu Trp Thr Asp Pro Tyr Gly Lys Trp Glu
 755 760

<210> 7379

<211> 70

<212> PRT

<213> B.fragilis

<400> 7379

Phe Gly Gly Lys Thr Ala Leu Gln Asp Leu Ile Lys Arg Gly Phe Arg
 1 5 10 15
 Val Pro Pro Glu Thr Ala Leu Ser Trp Asp Tyr Gly Gly Asn Ser Phe
 20 25 30
 Ile Leu Trp Asp Trp Asn Ile Gly Phe Phe Ser Thr Asn Arg Phe Val
 35 40 45
 Lys Gly His Leu Arg Asn Ile Ser Tyr Tyr Arg Lys Pro Lys Gly Gly
 50 55 60
 Val Asn Ile Ile Pro Arg
 65 70

<210> 7380

<211> 397

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (387)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7380

Pro	Ala	Val	Lys	Thr	Leu	Asn	Trp	Cys	Arg	Asn	Thr	Asp	Ile	Thr	Ala	1	5	10	15
Trp	Arg	Val	Phe	Thr	Ile	Ala	Asp	Pro	Asn	Glu	Ile	Trp	Ile	Met	Glu	20	25	30	
Met	Ile	Gly	Lys	Gly	Pro	Gly	Ile	Arg	Gly	Ala	Val	Trp	Val	Ala	Val	35	40	45	
Arg	Val	Pro	Asp	Asp	Cys	Ile	Ser	Ala	His	Ala	Asn	Gln	Ser	Arg	Ile	50	55	60	
His	Gln	Phe	Asp	Met	Ala	Asp	Lys	Ala	Asn	Cys	Met	Tyr	Ser	Asn	Asp	65	70	75	80
Val	Ile	Ser	Phe	Ala	Arg	Glu	Lys	Gly	Tyr	Phe	Ser	Gly	Val	Asn	Lys	85	90	95	
Asp	Phe	Ser	Phe	Ala	Asp	Ala	Tyr	Ala	Pro	Leu	Asp	Phe	Gly	Ala	Arg	100	105	110	
Arg	Phe	Cys	Glu	Ala	Arg	Val	Trp	Ser	Tyr	Phe	Asn	Met	Phe	Thr	Asp	115	120	125	
Gln	Gly	Glu	Ala	Tyr	Leu	Pro	Tyr	Ile	Gln	Gly	Lys	Thr	Asn	Asp	Pro	130	135	140	
Met	Pro	Leu	Phe	Val	Lys	Pro	Lys	Arg	Lys	Leu	Ser	Val	Gln	Asp	Val	145	150	155	160
Lys	Asn	Ala	Met	Arg	Asp	His	Tyr	Glu	Gly	Thr	Ala	Leu	Asp	Ile	Ser	165	170	175	
Asn	Asp	Phe	Gly	Ala	Gly	Pro	Tyr	Lys	Thr	Pro	Tyr	Arg	Leu	Ser	Pro	180	185	190	
Leu	Thr	Phe	Lys	Val	Gly	Asp	Gln	Glu	Tyr	Phe	Asn	Glu	Arg	Pro	Ile	195	200	205	
Ser	Thr	Gln	Gln	Ser	Gly	Phe	Val	Phe	Val	Ala	Gln	Met	Arg	Ala	Asn	210	215	220	
Leu	Pro	Asp	Ala	Val	Gly	Gly	Val	Leu	Trp	Phe	Gly	Thr	Asp	Asp	Ala	225	230	235	240
Asn	Met	Thr	Val	Phe	Thr	Pro	Val	Tyr	Cys	Cys	Thr	Thr	Lys	Ala	Pro	245	250	255	
Val	Cys	Tyr	Thr	Arg	Val	Asp	Gly	Ala	Asp	Tyr	Ile	Thr	Phe	Ser	Trp	260	265	270	
Asn	Ser	Ala	Phe	Trp	Ile	Phe	Asn	Trp	Val	Ala	Asn	Met	Val	Tyr	Pro	275	280	285	
Arg	Tyr	Asp	Leu	Met	Ile	Gly	Asp	Val	Arg	Ala	Thr	Gln	Asn	Glu	Leu	290	295	300	
Glu	Thr	Thr	Phe	Asn	Glu	Ala	Gln	Glu	Gly	Ile	Glu	Ala	Val	Ala	Val	305	310	315	320
Lys	Leu	Tyr	Glu	Lys	Asn	Pro	Glu	Thr	Ala	Val	Lys	Phe	Leu	Thr	Asn	325	330	335	
Tyr	Thr	Asp	Met	Thr	Ala	Gln	Ser	Thr	Phe	Asp	Thr	Trp	Lys	Arg	Leu	340	345	350	
Gly	Glu	Phe	Ile	Ile	Val	Lys	Tyr	Asn	Asp	Gly	Val	Ile	Arg	Lys	Met	355	360	365	
Lys	Asp	Gly	Lys	Phe	Glu	Arg	Asn	Ala	Ile	Gly	Gln	Pro	Ala	Gly	Val	370	375	380	
Val	Arg	Xaa	Gly	Tyr	Tyr	Arg	Asn	Ser	Ser	Lys	Ser	Met				385	390	395	

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099

Asn	Ile	Asp	Arg	Thr	Met	Gly	Asn	Glu	Glu	Leu	Ile	Lys	Gln	Val	Thr
1				5					10					15	
Glu	Lys	Ala	Glu	Lys	Trp	Leu	Thr	Pro	Ala	Tyr	Asp	Ala	Glu	Thr	Gln
		20						25					30		
Ala	Glu	Val	Lys	Arg	Met	Leu	Glu	Asn	Glu	Asp	Lys	Thr	Glu	Leu	Ile
		35					40					45			
Glu	Ala	Phe	Tyr	Lys	Asp	Leu	Glu	Phe	Gly	Thr	Gly	Gly	Leu	Arg	Gly
	50					55					60				
Ile	Met	Gly	Val	Gly	Thr	Asn	Arg	Met	Asn	Ile	Tyr	Thr	Val	Gly	Ala
65					70					75				80	
Ala	Thr	Gln	Gly	Leu	Ser	Asn	Tyr	Leu	Asn	Ala	Asn	Phe	Lys	Asp	Met
				85					90					95	
Lys	Gln	Ile	Ser	Val	Val	Val	Gly	Tyr	Asp	Cys	Arg	Asn	Asn	Ser	Ser
			100					105					110		
Leu	Phe	Ala	Lys	Ile	Ser	Ala	Asp	Ile	Phe	Ser	Ala	Asn	Gly	Ile	Lys
		115					120					125			
Val	Tyr	Leu	Phe	Glu	Glu	Met	Arg	Pro	Thr	Pro	Glu	Met	Ser	Phe	Ala
	130					135					140				
Ile	Arg	His	Leu	Gly	Cys	Gln	Ser	Gly	Ile	Ile	Leu	Thr	Ala	Ser	His
145					150					155				160	
Asn	Pro	Lys	Glu	Tyr	Asn	Gly	Tyr	Lys	Ala	Tyr	Trp	Asp	Asp	Gly	Ala
				165					170					175	
Gln	Val	Leu	Ala	Pro	His	Asp	Lys	Gly	Ile	Ile	Asp	Glu	Val	Asn	Lys
			180					185					190		
Ile	Ala	Ser	Ala	Ala	Asp	Ile	Lys	Phe	Gln	Gly	Asn	Pro	Asp	Leu	Ile
		195					200					205			
Gln	Ile	Ile	Gly	Glu	Asp	Val	Asp	Lys	Ile	Tyr	Leu	Asp	Met	Val	Lys
	210					215					220				
Thr	Val	Ser	Ile	Asp	Pro	Glu	Ala	Ile	Ala	Arg	His	Lys	Asp	Met	Lys
225					230					235				240	
Ile	Val	Tyr	Thr	Pro	Ile	His	Gly	Thr	Gly	Met	Met	Leu	Ile	Pro	Arg
				245					250					255	
Ala	Leu	Lys	Met	Trp	Gly	Phe	Glu	Asn	Val	Tyr	Thr	Val	Pro	Glu	Gln
			260					265					270		
Met	Ile	Lys	Asp	Gly	Asn	Phe	Pro	Thr	Val	Val	Ser	Pro	Asn	Pro	Glu
		275					280					285			
Asn	Ala	Glu	Ala	Leu	Thr	Met	Ala	Leu	Asn	Leu	Ala	Lys	Glu	Ile	Asp
		290				295					300				
Ala	Asp	Leu	Val	Met	Ala	Ser	Asp	Pro	Asp	Ala	Asp	Arg	Val	Gly	Ile
305					310					315				320	
Ala	Cys	Lys	Asn	Asp	Lys	Gly	Glu	Trp	Val	Leu	Ile	Asn	Gly	Asn	Gln
				325					330					335	
Thr	Cys	Leu	Met	Tyr	Leu	Tyr	Tyr	Ile	Ile	Thr	Gln	Tyr	Asn	Lys	Leu
			340					345					350		
Gly	Lys	Met	Thr	G											

420	Ile Ala Glu Val Ala Ala Trp	425	Ala Lys Asp Asn Gly Lys Thr Leu Tyr	430
435	Gln Leu Leu Met Asp Ile Tyr Val Glu Tyr Gly Phe Ser Lys Glu Phe	440		445
450	Thr Val Asn Val Val Lys Pro Gly Lys Ser Gly Ala Glu Glu Ile Lys	455		460
465	Ala Met Met Glu Asn Phe Arg Ala Asn Pro Pro Lys Glu Leu Gly Gly	470		475
		485		490
	Ser Lys Val Val Leu Ser Lys Asp Tyr Lys Thr Leu Lys Gln Thr Asp	500		505
	Ala Ala Gly His Val Thr Asp Ile Asp Met Pro Glu Pro Ser Asn Val	515		520
	Leu Gln Tyr Phe Thr Glu Asp Gly Gly Lys Val Ser Val Arg Pro Ser	530		535
	Gly Thr Glu Pro Lys Ile Lys Phe Tyr Ile Glu Val Lys Gly Glu Met	545		550
	Gly Cys Arg Asn Cys Phe Ala Thr Ala Asp Ala Glu Ala Thr Glu Lys	565		570
	Val Glu Ala Val Lys Lys Ser Leu Gly Ile	580		585

<210> 7382

<211> 64

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (37)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7382

Arg Thr Ala Ser Ser Ser Val Met Pro Leu Val Asn Leu Gln Ala Trp	
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Tyr Val Arg Ala Ile Ile Gly Ile Pro Arg Arg Val Cys Glu Ala Asn	
	20 25 30
Arg Arg Thr Leu Xaa Gly Asn Arg Asn Ile Ala Ser Lys Ser Phe Leu	
	35 40 45
Thr Lys Arg Tyr Glu Phe Lys Leu Ile Leu Leu His Leu Tyr Phe Asn	
	50 55 60

<210> 7383

<211> 81

<212> PRT

<213> B.fragilis

<400> 7383

Glu Leu Phe Ile Gln Glu Asn Asp Ser Asp Arg Phe Pro Val Thr Leu	
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Pro Ile Ile Val Glu Thr Gly Lys Ile Ser Thr Arg Ile Gly Asp Ile	
	20 25 30
Val Arg Val Glu Gly Thr Ala Gln Val Leu Gly Phe Leu Glu Asn Ser	
	35 40 45
Pro Lys Arg Asn Ala Pro Ser Asn Glu Gly Gln Gly Ile Pro Ile Ile	
	50 55 60
Leu Trp Ile His Leu Tyr Asp Ala Lys Tyr Pro Ser Lys Glu Tyr Leu	
65	70 75 80
Lys	

<210> 7384
 <211> 314
 <212> PRT
 <213> B.fragilis

<400> 7384

Tyr Ile Val Met Asp Lys Asp Leu Leu Tyr Asn Phe Tyr Lys Gly Lys
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 Val Ser Ile Glu Glu Gly Gln Arg Val Lys Ala Trp Val Glu Ala Ser
 20 25 30
 Asp Glu Asn Glu Arg Ala Phe Tyr Arg Glu Arg Lys Ile Phe Asp Ala
 35 40 45
 Leu Met Leu Asn Asn Pro Leu Pro Val Lys Lys Thr Ser Phe Phe Asn
 50 55 60
 Phe Thr His Tyr Lys Lys Ile Glu Trp Leu Lys Ile Ala Met Ala Val
 65 70 75 80
 Ile Leu Thr Phe Leu Leu Ser Tyr Phe Tyr Gln Glu Tyr Lys Ala Gly
 85 90 95
 Leu Asp Ser Val Ala Met Ser Thr Ile Ser Val Pro Glu Gly Gln Arg
 100 105 110
 Thr Asn Val Thr Leu Pro Asp Gly Ser Asn Val Trp Leu Asn Ala Cys
 115 120 125
 Thr Thr Ile Gln Tyr Pro Thr Ser Phe Asn Ser Arg Glu Arg Phe Val
 130 135 140
 Ile Leu Lys Gly Glu Ala Tyr Phe Asp Val Lys Lys Asn Lys Ser Arg
 145 150 155 160
 Pro Phe Ile Val His Thr Asp Ala Tyr Ser Ile Glu Val Leu Gly Thr
 165 170 175
 Lys Phe Asn Val Asp Ala Tyr Pro Glu Thr Glu Lys Phe Glu Thr Thr
 180 185 190
 Leu Met His Gly Ser Val Lys Val Thr Leu Lys Ala Asp Ser Ser Gln
 195 200 205
 Thr Val Ile Leu Lys Pro Asp His Lys Leu Ser Leu Glu Lys Gly Arg
 210 215 220
 Phe Val Met Thr Lys Val Glu Asp Tyr Asn Pro Tyr Arg Trp Lys Glu
 225 230 235 240
 Gly Leu Ile Cys Phe Ser Asp Glu Ser Phe Pro Asn Ile Met Lys Asp
 245 250 255
 Phe Glu Lys Tyr Tyr Gly Val Lys Ile Val Ile Glu Asn Lys Asn Val
 260 265 270
 Leu Gln Ile Asn Phe Thr Gly Lys Phe Arg Gln Thr Asp Gly Ile Asp
 275 280 285
 Tyr Ala Leu Arg Ile Leu Gln Lys Asn Ile Asp Phe Gln Tyr Glu Lys
 290 295 300
 Asp Asn Glu Lys Gln Ile Ile Tyr Ile Lys
 305 310

<210> 7385
 <211> 195
 <212> PRT
 <213> B.fragilis

<400> 7385

Ser Tyr Val Met His Ile Lys Thr Asn Pro Lys Asp Lys Met Ser Phe
 1 5 10 15
 Asn Gln Leu Tyr Asn Asp Tyr Gln Thr Arg Phe Leu Asn Phe Ala Asn
 20 25 30

Thr Tyr Val Arg Asp Trp Asp Val Ala Glu Asp Ile Thr Thr Glu Ala
 35 40 45
 Leu Ile Tyr Tyr Trp Glu Asn Arg Asn Thr Leu Ser Glu Val Ser Asn
 50 55 60
 Ile Pro Ala Tyr Ile Leu Thr Ile Ile Lys Asn Lys Ser Leu Asn Tyr
 65 70 75 80
 Leu Arg His Leu Gln Ile Arg Glu Glu His Ser Glu Asn Ile Arg Lys
 85 90 95
 Tyr Ile Glu Trp Glu Leu Asn Ala Arg Ile Val Ser Leu Asp Ala Cys
 100 105 110
 Glu Pro Tyr Glu Leu Leu Val Lys Glu Met Gln Glu Leu Ile Gln Gln
 115 120 125
 Thr Leu Asp Lys Leu Pro Glu Arg Thr Arg Lys Ile Phe Ile Leu Ser
 130 135 140
 Arg Tyr Glu Asn Lys Ser Tyr Lys Glu Ile Ala Ala Leu Met Asn Met
 145 150 155 160
 Thr Thr Lys Gly Val Asp Phe His Ile Cys Lys Ala Leu Lys Ala Leu
 165 170 175
 Gln Ile Asn Leu Lys Asp Tyr Phe Pro Leu Phe Leu Tyr Phe Leu Met
 180 185 190
 Lys Phe His
 195

<210> 7386
 <211> 629
 <212> PRT
 <213> B.fragilis

<400> 7386
 Glu Asp Arg Leu Lys Thr Met Glu Glu Asn Glu Leu Ile Pro Val Asp
 1 5 10 15
 Asn Asn Pro Val Glu Tyr Thr Asp Asp Asn Ile Arg His Leu Ser Asp
 20 25 30
 Met Glu His Val Arg Thr Arg Pro Gly Met Tyr Ile Gly Lys Leu Gly
 35 40 45
 Asp Gly Ser His Thr Glu Asp Gly Ile Tyr Val Leu Leu Lys Glu Val
 50 55 60
 Ile Asp Asn Ser Ile Asp Glu Phe Lys Met Gln Ser Gly Lys Lys Ile
 65 70 75 80
 Glu Ile Arg Val Glu Asn Leu Arg Val Ser Val Arg Asp Tyr Gly
 85 90 95
 Arg Gly Ile Pro Gln Gly Lys Leu Ile Glu Ala Val Ser Val Leu Asn
 100 105 110
 Thr Gly Gly Lys Tyr Asp Ser Lys Ala Phe Lys Lys Ser Val Gly Leu
 115 120 125
 Asn Gly Val Gly Val Lys Ala Val Asn Ala Leu Ser Ser Asn Phe Glu
 130 135 140
 Val Arg Ser Tyr Arg Asp Gly Lys Val Arg Cys Ala Thr Phe Thr Lys
 145 150 155 160
 Gly Glu Leu Val Thr Asp His Thr Glu Asp Thr Glu Glu Glu Asn Gly
 165 170 175
 Thr Tyr Ile Phe Phe Glu Pro Asp Glu Thr Leu Phe Leu Asn Tyr Ser
 180 185 190
 Phe Arg Pro Glu Phe Ile Glu Thr Met Leu Arg Asn Tyr Thr Tyr Leu
 195 200 205
 Asn Thr Gly Leu Ala Ile Ile Tyr Asn Gly Gln Arg Ile Leu Ser Arg
 210 215 220
 Asn Gly Leu Val Asp Leu Leu Asn Asp Asn Met Thr Ala Thr Gly Leu
 225 230 235 240

Tyr Pro Ile Val His Leu Lys Gly Glu Asp Ile Glu Ile Ala Phe Thr
 245 250 255
 His Thr Gly Gln Tyr Gly Glu Glu Tyr Tyr Ser Phe Val Asn Gly Gln
 260 265 270
 His Thr Thr Gln Gly Gly Thr His Gln Ser Ala Phe Lys Glu His Ile
 275 280 285
 Ala Arg Thr Ile Lys Glu Phe Tyr Asn Lys Asn Gln Asp Tyr Thr Asp
 290 295 300
 Ile Arg Asn Gly Leu Val Ala Ala Ile Ala Val Asn Val Glu Glu Pro
 305 310 315 320
 Met Phe Glu Ser Gln Thr Lys Ile Lys Leu Gly Ser Thr Asn Met Ser
 325 330 335
 Pro Gly Gly Ile Thr Val Asn Lys Phe Val Gly Asp Phe Ile Lys Gln
 340 345 350
 Glu Val Asp Asn Phe Leu His Lys His Ala Asp Ile Ala Glu Ile Met
 355 360 365
 Leu Gln Lys Ile Gln Asp Ser Glu Lys Glu Arg Lys Ala Ile Ala Gly
 370 375 380
 Val Thr Lys Leu Ala Arg Glu Arg Ala Lys Lys Ala Asn Leu His Asn
 385 390 395 400
 Arg Lys Leu Arg Asp Cys Arg Val His Leu Asn Asp Val Lys Gly Lys
 405 410 415
 Gly Leu Glu Glu Glu Ser Cys Ile Phe Ile Thr Glu Gly Asp Ser Ala
 420 425 430
 Ser Gly Ser Ile Thr Lys Ser Arg Asp Val Asn Thr Gln Ala Val Phe
 435 440 445
 Ser Leu Arg Gly Lys Pro Leu Asn Ser Phe Gly Leu Thr Lys Lys Val
 450 455 460
 Val Tyr Glu Asn Glu Glu Phe Asn Leu Leu Gln Ala Ala Leu Asn Ile
 465 470 475 480
 Glu Asp Gly Ile Glu Gly Leu Arg Tyr Asn Lys Val Ile Val Ala Thr
 485 490 495
 Asp Ala Asp Val Asp Gly Met His Ile Arg Leu Leu Leu Ile Thr Phe
 500 505 510
 Phe Leu Gln Phe Phe Pro Asp Leu Ile Lys Lys Gly His Val Tyr Ile
 515 520 525
 Leu Gln Thr Pro Leu Phe Arg Val Arg Asn Lys Lys Lys Thr Leu Tyr
 530 535 540
 Cys Tyr Thr Glu Glu Glu Arg Val Asn Ala Ile Lys Glu Leu Ser Pro
 545 550 555 560
 Asn Pro Glu Ile Thr Arg Phe Lys Gly Leu Gly Glu Ile Ser Pro Asp
 565 570 575
 Glu Phe Arg His Phe Ile Gly Lys Asp Met Arg Leu Glu Gln Val Ser
 580 585 590
 Leu Arg Lys Thr Asp Thr Val Lys Glu Leu Leu Glu Phe Tyr Met Gly
 595 600 605
 Lys Asn Thr Met Glu Arg Gln Asn Phe Ile Ile Asp Asn Leu Val Ile
 610 615 620
 Glu Glu Asp Ile Ala
 625

<210> 7387

<211> 160

<212> PRT

<213> B.fragilis

<400> 7387

Ser Gly Tyr Arg Arg Arg His Arg Ile Asn Met Arg Arg Ala Ile Phe
 1 5 10 15

Pro Gly Thr Phe Asp Pro Phe Thr Ile Gly His Tyr Ser Val Val Gln
 20 25 30
 Arg Thr Leu Thr Phe Met Asp Glu Val Val Ile Gly Ile Gly Ile Asn
 35 40 45
 Glu Asn Lys Asn Thr Tyr Phe Pro Ile Glu Lys Arg Val Glu Met Ile
 50 55 60
 Arg Lys Phe Tyr Lys Asp Glu Pro Arg Ile Lys Val Glu Ser Tyr Asp
 65 70 75 80
 Cys Leu Thr Ile Asp Phe Ala Arg Gln Val Asp Ala Gln Phe Ile Val
 85 90 95
 Arg Gly Ile Arg Thr Val Lys Asp Phe Glu Tyr Glu Glu Thr Ile Ala
 100 105 110
 Asp Ile Asn Arg Lys Leu Ala Gly Ile Glu Thr Ile Leu Leu Phe Thr
 115 120 125
 Glu Pro Glu Leu Thr Cys Val Ser Ser Thr Ile Val Arg Glu Leu Leu
 130 135 140
 Gly Tyr Asn Lys Asp Ile Ser Met Phe Ile Pro Lys Gly Met Glu Met
 145 150 155 160

<210> 7388

<211> 146

<212> PRT

<213> B.fragilis

<400> 7388

His Asn Thr Arg Ile Leu Pro Ser Ile Arg Val Met Val Arg Leu Ala
 1 5 10 15
 Lys Asn Asn Pro Lys Asn Gln Ser Arg Met Pro Glu Pro Thr Lys Val
 20 25 30
 Lys Arg Ser Lys Leu Leu Met Pro Val Ser Arg Lys Gly Val Met Glu
 35 40 45
 Ala Leu His Pro Asn Thr Lys Lys Met Leu Asn Arg Leu Leu Pro Ile
 50 55 60
 Thr Leu Pro Met Ala Ile Ser Gly Phe Phe Phe Lys Ala Ala Thr Ile
 65 70 75 80
 Asp Val Ala Ser Ser Gly Arg Glu Val Pro Pro Ala Thr Ser Val Ser
 85 90 95
 Pro Ile Thr Asp Ser Leu Thr Pro Arg Cys Arg Ala Met Leu Leu Ala
 100 105 110
 Pro Ser Thr Asn His Cys Pro Pro Lys Ile Ser Pro Ala Asn Pro Pro
 115 120 125
 Arg Met Lys Ser Thr Asp Phe His Ile Gly Arg Leu Leu Ile Ser Ser
 130 135 140
 Ser Gly
 145

<210> 7389

<211> 381

<212> PRT

<213> B.fragilis

<400> 7389

Ile Gln Ala Met Ala Ile Thr Ile Lys Lys Val Ser Thr Lys Arg Glu
 1 5 10 15
 Leu Lys Lys Phe Ile Arg Phe Asn Tyr Glu Leu Tyr Lys Glu Asn Pro
 20 25 30
 Tyr Ser Val Pro Asp Leu Tyr Asp Asp Met Leu Asn Thr Phe Asn Lys
 35 40 45
 Lys Lys Asn Ala Ala Phe Glu Phe Cys Glu Ala Glu Tyr Phe Leu Ala

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 7390

Phe	Lys	Gly	Ile	Asp	Met	Asp	Ile	Leu	Leu	Leu	Ile	Gly	Gly	Leu	Leu
1				5					10					15	
Leu	Ile	Leu	Ile	Gly	Ala	Asn	Cys	Leu	Thr	Asp	Gly	Ala	Ala	Ser	Val
			20					25					30		
Ala	Lys	Arg	Phe	Arg	Ile	Pro	Ser	Ile	Val	Ile	Gly	Leu	Thr	Ile	Val
		35					40					45			
Ala	Phe	Gly	Thr	Ser	Ala	Pro	Glu	Leu	Thr	Val	Ser	Val	Ser	Ser	Ala
	50					55				60					
Leu	Lys	Gly	Ser	Ala	Asp	Ile	Ala	Val	Gly	Asn	Val	Val	Gly	Ser	Asn
65					70					75				80	
Ile	Phe	Asn	Thr	Leu	Met	Ile	Val	Gly	Cys	Thr	Ala	Leu	Phe	Ala	Pro

			85				90				95				
Ile	Val	Ile	Thr	Arg	Asn	Thr	Leu	Arg	Lys	Glu	Ile	Pro	Leu	Cys	Ile
			100						105				110		
Leu	Ser	Ser	Ile	Val	Leu	Leu	Ile	Cys	Ala	Asn	Asp	Val	Phe	Leu	Asn
		115					120					125			
Lys	Ala	Ser	Ser	Asn	Ile	Leu	Ser	Ile	Ser	Asp	Gly	Leu	Ile	Leu	Leu
	130					135					140				
Cys	Phe	Phe	Thr	Ile	Phe	Leu	Gly	Tyr	Thr	Phe	Ala	Ile	Ala	Ser	Pro
145					150					155					160
Thr	Asn	Asn	Thr	Gln	Pro	Glu	Glu	Glu	Ile	Lys	Ser	Leu	Pro	Met	Trp
			165						170					175	
Lys	Ser	Val	Leu	Phe	Ile	Leu	Gly	Gly	Leu	Ala	Gly	Leu	Ile	Phe	Gly
		180						185					190		
Gly	Gln	Trp	Phe	Val	Glu	Gly	Ala	Ser	Asn	Ile	Ala	Arg	His	Leu	Gly
	195					200					205				
Val	Ser	Glu	Ser	Val	Ile	Gly	Leu	Thr	Leu	Val	Ala	Gly	Gly	Thr	Ser
	210					215					220				
Leu	Pro	Glu	Leu	Ala	Thr	Ser	Ile	Val	Ala	Ala	Leu	Lys	Lys	Asn	Pro
225					230				235						240
Glu	Ile	Ala	Ile	Gly	Asn	Val	Ile	Gly	Ser	Asn	Leu	Phe	Asn	Ile	Phe
			245					250						255	
Phe	Val	Leu	Gly	Cys	Ser	Ala	Ser	Ile	Thr	Pro	Leu	Arg	Leu	Thr	Gly
		260						265					270		
Ile	Asn	Asn	Phe	Asp	Leu	Phe	Thr	Leu	Val	Gly	Ser	Gly	Ile	Leu	Leu
		275					280					285			
Trp	Phe	Phe	Gly	Leu	Phe	Phe	Ala	Lys	Arg	Thr	Ile	Thr	Arg	Ile	Glu
	290					295					300				
Gly	Ser	Ile	Leu	Val	Leu	Cys	Tyr	Ile	Ala	Tyr	Thr	Thr	Tyr	Leu	Ile
305					310					315					320
Tyr	Gln	Ile													

<210> 7391

<211> 306

<212> PRT

<213> B.fragilis

<400> 7391

Thr	His	Val	Ile	Met	Lys	Arg	Ile	Ile	Tyr	Leu	Leu	Ile	Gly	Leu	Cys
1				5					10					15	
Ser	Val	Leu	Gly	Leu	Gln	Ala	Gln	Asn	Phe	Gly	Ser	Pro	Ala	Met	Arg
		20					25					30			
Lys	Leu	Gln	Leu	Ala	Glu	Phe	Ala	Ile	Ser	Asn	Leu	Tyr	Val	Asp	Thr
	35					40					45				
Val	Asn	Glu	Asn	Lys	Leu	Val	Glu	Ser	Ala	Ile	Ile	Glu	Met	Leu	Ala
	50					55					60				
Gln	Leu	Asp	Pro	His	Ser	Thr	Tyr	Ser	Asp	Ala	Glu	Glu	Val	Lys	Lys
65				70					75					80	
Met	Asn	Glu	Pro	Leu	Gln	Gly	Asn	Phe	Glu	Gly	Ile	Gly	Val	Gln	Phe
			85					90					95		
Gln	Met	Ile	Glu	Asp	Thr	Leu	Leu	Ile	Val	Gln	Pro	Val	Ser	Asn	Gly
	100						105					110			
Pro	Ser	Glu	Lys	Val	Gly	Ile	Leu	Ala	Gly	Asp	Arg	Ile	Ile	Ala	Val
	115					120					125				
Asn	Asp	Thr	Ala	Ile	Ala	Gly	Val	Lys	Met	Gly	Thr	Glu	Glu	Ile	Met
	130					135					140				
Gly	Arg	Leu	Arg	Gly	Pro	Lys	Asp	Ser	Lys	Val	Asn	Leu	Thr	Ile	Ile
145					150					155					160
Arg	Arg	Gly	Val	Lys	Glu	Pro	Leu	Leu	Phe	Asn	Val	Lys	Arg	Asp	Lys

165 170 175
 Ile Pro Ile Leu Ser Leu Asp Ala Ala Tyr Met Ile Gln Pro Lys Ile
 180 185 190
 Gly Tyr Ile Arg Ile Asn Arg Phe Gly Ala Thr Thr Ala Glu Glu Phe
 195 200 205
 Leu Lys Ala Leu Lys Glu Leu Gln Lys Lys Gly Met Lys Asp Leu Ile
 210 215 220
 Leu Asp Leu Gln Gly Asn Gly Gly Gly Tyr Leu Asn Ala Ala Ile Asp
 225 230 235 240
 Leu Ala Asn Glu Phe Leu Gly Gln Lys Lys Leu Ile Val Tyr Thr Glu
 245 250 255
 Arg Pro Ser Ala Gln Arg Asn Glu Val Phe Gly Gln Gly Asn Gly Asn
 260 265 270
 Phe Arg Asn Gly Arg Leu Val Glu Leu Val Asp Lys Tyr Ser Leu Trp
 275 280 285
 Ala Val Lys Ile Gly Thr Gly Ala Ile Gln Asp Trp Glu Gln Arg Asn
 290 295 300
 Gly Gly
 305

<210> 7392

<211> 209

<212> PRT

<213> B.fragilis

<400> 7392

Ser Lys Glu Thr Ile Asn Val Lys Leu Asn Phe Lys Arg Glu Phe Met
 1 5 10 15
 Lys Arg Lys Leu Met Leu Leu Leu Thr Cys Leu Phe Met Gly Ile Gly
 20 25 30
 Leu Val Thr Ala Gln Thr Gln Lys Val Thr Gly Val Val Ile Ser Glu
 35 40 45
 Glu Asp Gly Gln Pro Val Val Gly Ala Ser Val Leu Ala Lys Gly Thr
 50 55 60
 Thr Val Gly Val Ile Thr Asp Val Asp Gly Lys Phe Thr Leu Ser Gly
 65 70 75 80
 Ile Pro Ser Ser Ala Lys Thr Leu Gln Ile Ser Tyr Ile Gly Met Gln
 85 90 95
 Thr Ala Glu Val Ala Ile Ala Pro Asn Ile Arg Val Ile Leu Lys Thr
 100 105 110
 Asp Ser Lys Ala Leu Asp Glu Val Val Val Ala Tyr Gly Thr Gln
 115 120 125
 Ser Ala Arg Thr Val Thr Ala Ser Val Ser Thr Val Arg Ala Asp Ala
 130 135 140
 Leu Lys Asp Val Pro Ser Val Ser Phe Asp Gln Met Leu Gln Gly Arg
 145 150 155 160
 Ala Ser Gly Val Ser Ile Thr Thr Pro Ser Ala Gly Val Gly Gln Ala
 165 170 175
 Pro Ile Val Arg Val Arg Gly Val Asn Ser Ile Thr Ser Gly Thr Ser
 180 185 190
 Pro Leu Tyr Val Val Asp Val Phe Thr Gly Gly Ala Met Ile Ala Arg
 195 200 205
 Gly

<210> 7393

<211> 398

<212> PRT

<213> B.fragilis

<400> 7393

Leu Lys Ile Lys Glu Met Asp Lys Ile Ile Tyr Ser Leu Val Tyr Asn
 1 5 10 15
 Arg Lys Lys Ser Leu Asn Lys Lys Gly Met Ala Leu Val Gln Val Glu
 20 25 30
 Ala Tyr Leu Asn Arg Lys Lys Lys Tyr Phe Ser Thr Lys Val Tyr Leu
 35 40 45
 Ser Pro Asp Gln Trp Asp Phe Lys Lys Arg Met Val Lys Asn His Pro
 50 55 60
 Asn Ala Asp Ala Ile Asn His Met Leu Tyr Glu Phe Met Ala Glu Ile
 65 70 75 80
 Glu Lys Lys Glu Leu Gly Leu Trp Gln Gln Gly Lys Gln Ile Ser Leu
 85 90 95
 Asp Ser Leu Lys Asn Ser Met Glu Asn Gln Asp Asp Ser Thr Ser Phe
 100 105 110
 Ile Ala Phe Phe Arg Asn Glu Ile Ala Lys Ser Ser Leu Lys Glu Ser
 115 120 125
 Thr Lys Arg Asn His Leu Ser Thr Leu Glu Leu Leu Arg Ser Tyr Lys
 130 135 140
 Lys Asp Val Ser Phe Ser Glu Leu Thr Phe Glu Phe Ile Ser Ser Phe
 145 150 155 160
 Asp His Tyr Leu Gln Lys Gly Tyr His Thr Asn Thr Ile Ala Lys
 165 170 175
 His Met Lys His Leu Lys Arg His Ile Asn Val Ala Ile Asn Lys Glu
 180 185 190
 Tyr Met Glu Ile Gln Lys Tyr Ala Phe Arg Lys Tyr Lys Ile Lys Ser
 195 200 205
 Val Glu Asn Asn His Thr His Leu Ser Pro Glu Glu Leu Gly Lys Ile
 210 215 220
 Glu Ser Leu Glu Leu Gly Gly Arg Phe Thr Lys Leu Glu Lys Thr Lys
 225 230 235 240
 Asp Ala Phe Leu Phe Cys Cys Tyr Ala Gly Leu Arg Tyr Ser Asp Phe
 245 250 255
 Thr Asn Leu Ser Pro Glu Asn Ile Val Lys Met His Gln Glu Thr Trp
 260 265 270
 Leu Ile Tyr Lys Ser Val Lys Thr Asn Thr Glu Val Arg Leu Pro Leu
 275 280 285
 Tyr Leu Leu Phe Glu Gly Lys Gly Ile Glu Val Leu Asn Lys Tyr Gln
 290 295 300
 Asp Asp Leu Ala Asp Phe Phe Lys Leu Arg Asp Asn Ser Asn Val Asn
 305 310 315 320
 Lys Glu Leu Leu Ile Ile Ala Lys Leu Ser Gly Leu Asn Lys Arg Ile
 325 330 335
 Ser Phe His Thr Ala Arg His Thr Asn Ala Thr Leu Leu Ile Tyr Ser
 340 345 350
 Gly Val Asn Ile Thr Thr Val Gln Lys Leu Leu Gly His Lys Ser Val
 355 360 365
 Lys Thr Thr Gln Val Tyr Thr Asn Ile Met Asp Ile Thr Ile Val Arg
 370 375 380
 Asp Leu Glu Lys Ser Lys Asn Asn Arg Lys Val Ser Tyr Met
 385 390 395

<210> 7394

<211> 156

<212> PRT

<213> B.fragilis

<400> 7394

Lys Leu Lys Pro Met Lys Lys Asn Leu Tyr Trp Met Ala Ala Ala Phe
 1 5 10 15
 Ile Thr Leu Thr Ala Val Gly Cys Thr Asn Ala Lys Lys Ala Asp Val
 20 25 30
 Ser Ala Ala Gly Ser Asp Thr Thr Gln Val Ile Asp Met His Thr Ala
 35 40 45
 Glu Thr Ser Leu Asp Tyr Tyr Gly Val Tyr Lys Gly Thr Val Pro Ala
 50 55 60
 Ala Asp Cys Pro Gly Ile Glu Leu Thr Leu Thr Lys Lys Asp Arg
 65 70 75 80
 Thr Tyr Thr Tyr His Trp Ala Tyr Ile Asp Arg Lys Asp Ala Asp Phe
 85 90 95
 Asp Glu Thr Gly Thr Phe Thr Val Lys Asp Asn Leu Leu Thr Leu Thr
 100 105 110
 Glu Lys Gly Gly Glu Val Ser Tyr Phe Lys Val Gln Glu Gly Ser Leu
 115 120 125
 Val Met Leu Asn Asn Glu Lys Gln Pro Ala Thr Gly Thr Leu Ala Asp
 130 135 140
 Ala Tyr Val Leu Lys Gln Glu Glu Val Phe Leu Asp
 145 150 155

<210> 7395

<211> 738

<212> PRT

<213> B.fragilis

<400> 7395

Thr His Phe Thr Lys Lys Tyr Ala Cys Met Gln Arg Ala Lys Lys Asn
 1 5 10 15
 Tyr Leu Ile Tyr Ala Val Met Leu Leu Leu Phe Gly Ala Leu Ile Tyr
 20 25 30
 Met Ala Ile Glu Glu Gly Asp Arg Phe Ser His His Ala Val Ala Ser
 35 40 45
 Ser Thr Val Ala Glu Asp Thr Pro Phe Thr Met Phe Cys Gln Phe Val
 50 55 60
 Thr Asp Asn Leu His His Pro Leu Ser Ile Leu Ile Gln Ile Ile
 65 70 75 80
 Ala Val Leu Leu Met Val Arg Leu Phe Gly Phe Leu Phe Lys His Ile
 85 90 95
 Gly Gln Pro Gly Val Ile Gly Glu Ile Val Ala Gly Ile Val Leu Gly
 100 105 110
 Pro Ser Val Leu Gly Tyr Phe Phe Pro Asp Val Phe Gln Ala Leu Phe
 115 120 125
 Pro Pro Glu Ser Leu Thr Asn Leu Glu Leu Leu Ser Gln Val Gly Leu
 130 135 140
 Val Leu Phe Met Phe Val Ile Gly Met Glu Leu Asp Phe Ser Val Leu
 145 150 155 160
 Lys Asn Lys Ile Asn Glu Thr Leu Val Ile Ser His Ala Gly Ile Leu
 165 170 175
 Val Pro Phe Phe Leu Gly Ile Val Ala Ser Tyr Trp Ile Tyr Glu Glu
 180 185 190
 Tyr Ala Ala Ala Gln Thr Ala Phe Leu Pro Phe Ala Leu Phe Ile Gly
 195 200 205
 Ile Ser Met Ser Ile Thr Ala Phe Pro Val Leu Ala Arg Ile Ile Gln
 210 215 220
 Glu Arg Asn Met Thr Lys Thr Ser Leu Gly Thr Leu Ala Ile Ala Ser
 225 230 235 240
 Ala Ala Asn Asp Asp Val Thr Ala Trp Cys Leu Leu Ala Val Val Ile
 245 250 255

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Ala	Ile	Ala	Lys	Ala	Gly	Thr	Phe	Ala	Ser	Ala	Leu	Tyr	Ala	Ile	Gly
			260					265					270		
Leu	Thr	Ala	Leu	Tyr	Ile	Ile	Ile	Met	Phe	Met	Val	Val	Arg	Pro	Phe
		275					280					285			
Leu	Lys	Lys	Val	Gly	Glu	Val	Tyr	Ala	Asn	Gln	Glu	Val	Ile	Asn	Lys
	290				295						300				
Thr	Phe	Val	Ala	Leu	Ile	Leu	Leu	Ile	Leu	Ile	Ser	Ser	Thr	Leu	
305					310					315				320	
Thr	Glu	Ile	Ile	Gly	Ile	His	Ala	Leu	Phe	Gly	Ala	Phe	Met	Ala	Gly
				325					330					335	
Val	Val	Met	Pro	Pro	Ser	Ile	Gly	Phe	Arg	Lys	Val	Met	Met	Glu	Lys
			340					345				350			
Val	Glu	Asp	Ile	Ala	Leu	Val	Phe	Phe	Leu	Pro	Leu	Phe	Phe	Ala	Phe
	355						360					365			
Thr	Gly	Leu	Arg	Thr	Glu	Ile	Gly	Leu	Ile	Asn	Ser	Pro	Ala	Leu	Trp
	370					375					380				
Gly	Val	Cys	Leu	Leu	Leu	Ile	Thr	Val	Ala	Val	Ala	Gly	Lys	Leu	Gly
385					390					395					400
Gly	Cys	Ala	Val	Ala	Ala	Arg	Leu	Val	Gly	Glu	Ser	Trp	Lys	Asp	Ser
			405						410					415	
Phe	Thr	Ile	Gly	Thr	Leu	Met	Asn	Thr	Arg	Gly	Leu	Met	Glu	Leu	Val
			420					425					430		
Ala	Leu	Asn	Ile	Gly	Tyr	Glu	Met	Gly	Val	Leu	Pro	Pro	Ser	Ile	Phe
		435					440					445			
Val	Ile	Leu	Val	Ile	Met	Ala	Leu	Val	Thr	Thr	Phe	Met	Thr	Thr	Pro
	450					455					460				
Leu	Leu	His	Leu	Val	Glu	Arg	Val	Phe	Ala	Arg	Arg	Glu	Glu	Arg	Leu
465					470					475					480
Ser	Ala	Lys	Leu	Lys	Leu	Val	Phe	Cys	Phe	Gly	Arg	Pro	Glu	Ser	Gly
				485					490					495	
Arg	Ser	Leu	Leu	Ser	Ile	Phe	Phe	Leu	Leu	Phe	Gly	Lys	Lys	Met	Lys
			500					505					510		
Ala	Ala	Gln	Val	Val	Ala	Ala	His	Phe	Thr	Val	Gly	Thr	Asp	Leu	Asn
		515					520					525			
Pro	Leu	Asn	Ala	Glu	Gln	Tyr	Ala	Arg	Asp	Ser	Phe	Ser	Leu	Val	Asp
	530					535					540				
Glu	Lys	Ala	Ser	Glu	Leu	Gly	Leu	Ser	Val	Glu	Asn	Arg	Tyr	Arg	Val
545					550					555					560
Thr	Asp	Lys	Leu	Val	Gln	Asp	Met	Ile	Arg	Leu	Ala	Arg	Lys	Glu	Arg
				565					570					575	
Pro	Asp	Met	Phe	Leu	Leu	Gly	Ala	Gly	Ser	Lys	Tyr	Arg	Pro	Asp	Thr
			580					585					590		
Ala	Gly	Ser	Asn	Gly	Val	Leu	Trp	Leu	Ser	Leu	Phe	Arg	Asp	Lys	Ile
		595					600					605			
Asp	Asp	Val	Met	Glu	Gln	Val	Lys	Cys	Pro	Val	Ala	Val	Phe	Val	Asn
	610					615					620				
Arg	Gly	Tyr	Ser	Gly	Ser	Ser	Pro	Val	Ser	Phe	Val	Leu	Gly	Gly	Val
625					630					635					640
Ile	Asp	Ala	Phe	Leu	Leu	Thr	Tyr	Leu	Glu	Ser	Met	Leu	Glu	Gly	Gly
				645					650					655	
Ala	Gln	Val	His	Leu	Phe	Leu	Phe	Asp	Thr	Asp	Asp	Glu	Ala	Phe	Arg
			660					665					670		
Gln	Ser	Thr	Asp	Pro	Ile	Leu	Ala	Lys	Tyr	Ser	Ser	Gln	Ile	Arg	Thr
		675					680					685			
Arg	Pro	Phe	Ser	Gly	Ala	Ala	Asn	Leu	Thr	Ser	Ala	Ala	Lys	Asp	Gly
	690					695					700				
Leu	Leu	Val	Met	Ser	His	Leu	Ser	Tyr	Thr	Lys	Leu	Ser	Glu	Glu	Glu
705					710					715					720
Glu	Val	Phe	Arg	Asp	Leu	Pro	Ser	Leu	Leu	Val	Ile	Arg	Arg	Pro	Lys

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Lys Gly

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 Asp Arg Ser Leu Gln Gln Ala Glu Glu Asn Arg Arg Val Ser Lys Asn
 50 55 60
 Gln Tyr Glu Val Gly Leu Glu Thr Leu Ser Asp His Leu Glu Gly Gln
 65 70 75 80
 Ala Leu Trp Gln Gln Ala Tyr Glu Thr Lys Val Asn Ala His Phe Gln
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 Asn Lys Ile Asn Leu
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 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
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 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
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 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
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 Gly Asp Lys Ile Val Tyr
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Ser	Leu	Ile	Leu	Val	Leu	Gln	Lys	Glu	Asn	Lys	Gln	Asn	Ser	Asn	Met
			20					25					30		
Thr	Trp	Gln	Lys	Tyr	Lys	Leu	Asn	Leu	Arg	Asn	Ser	His	Leu	Leu	Glu
		35					40					45			
Glu	Phe	Phe	Gln	Ser	Trp	Arg	Asn	Leu	Thr	Pro	Cys	Phe	His	Pro	Leu
	50					55					60				
Ser	Thr	Gln	His	Trp	Val	Arg	Asp	Ala	Ala	Val	Ser	Ser	Asp	Ile	Ser
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Ser	Ala	Arg													

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<400> 7399

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Thr	Asn	Arg	Ser	Gly	Ala	Gly	Ala	Leu	Val	Leu	Cys	Thr	Ile	Leu	Phe
			20					25					30		
Cys	Leu	Cys	Ala	Cys	Thr	Glu	Asp	Ala	Ser	Tyr	Thr	Ala	Gly	Val	Trp
		35					40					45			
Tyr	Arg	Arg	Ser	Asp	Phe	Asp	Gly	Val	Ala	Arg	Thr	Asp	Ala	Ala	Gly
	50					55					60				
Phe	Thr	Ile	Gly	Asn	Lys	Gly	Tyr	Ile	Cys	Gly	Gly	Tyr	Asn	Gly	Lys
65				70					75						80
Thr	Thr	Arg	Leu	Ala	Asp	Thr	Trp	Glu	Tyr	Asp	Ile	Asp	Asn	Asp	Trp
			85					90					95		
Trp	Thr	Gln	Arg	Ala	Asp	Met	Pro	Gly	Thr	Val	Arg	Asn	Ala	Ala	Thr
		100						105					110		
Gly	Phe	Pro	Val	Gly	Asn	Lys	Gly	Tyr	Ile	Thr	Thr	Gly	Tyr	Asn	Pro
		115					120					125			
Asp	Gln	Lys	Tyr	Leu	Ala	Asp	Thr	Trp	Glu	Tyr	Asp	Pro	Glu	Thr	Asn
	130					135					140				
Thr	Trp	Arg	Gln	Met	Asp	Asp	Phe	Lys	Gly	Gly	Ala	Arg	Tyr	Tyr	Ala
145				150					155						160
Leu	Gly	Phe	Gly	Ile	Asp	Asn	Tyr	Gly	Tyr	Val	Gly	Thr	Gly	Tyr	Asn
				165				170						175	
Asp	Asn	Tyr	Leu	Lys	Asp	Phe	Tyr	Arg	Phe	Asp	Pro	Thr	Ala	Ala	Ala
		180					185					190			
Gly	Ser	Gln	Trp	Thr	Ile	Val	Asn	Gly	Phe	Gly	Gly	Gln	Lys	Arg	Gln
	195						200					205			
Gly	Ala	Thr	Ala	Phe	Val	Ile	Asn	Gly	Lys	Ala	Tyr	Val	Cys	Gly	Gly
	210					215					220				
Gln	Asn	Asn	Asn	Ser	Asp	Val	Ser	Asp	Phe	Trp	Arg	Phe	Asp	Pro	Ser
225				230					235						240
Ala	Ala	Thr	Pro	Trp	Thr	Gln	Leu	Arg	Asp	Ile	Ala	Asn	Thr	Ser	Asp
			245					250					255		
Asp	Asp	Tyr	Asp	Asp	Asp	Tyr	Thr	Ser	Ile	Val	Arg	Ser	Tyr	Gly	Val
		260					265					270			
Ser	Phe	Val	Ile	Asp	Gly	Lys	Ala	Tyr	Leu	Thr	Leu	Gly	Ser	Thr	Ala

119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

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<210> 7400
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Pro	Met	Lys	Arg	Asn	Leu	Ile	Leu	Leu	Leu	Thr	Leu	Cys	His	Ser	Thr
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Leu	Leu	Ile	Tyr	Ser	Gln	Asn	Thr	Thr	Asn	Ser	Pro	Thr	Ser	Met	Phe
			20					25					30		
Gly	Leu	Gly	Glu	Leu	Ser	Thr	Gly	Glu	Gly	Gly	Gln	Tyr	Ser	Gly	Leu
		35					40					45			
Gly	Gly	Ala	Gly	Ile	Ala	Leu	Gln	Ser	Tyr	Asn	Phe	Leu	Asn	Thr	Ala
	50					55					60				
Asn	Pro	Ala	Ser	Leu	Thr	Ala	Ile	Glu	Gly	Gln	Arg	Phe	Leu	Ile	Asp
65					70					75					80
Ala	Gly	Val	Met	Gly	Ala	Tyr	Lys	Val	Tyr	Thr	Gln	Thr	Gly	Thr	Ser
				85					90					95	
Asn	His	Ser	Leu	Val	Gly	Asn	Leu	Asn	Asn	Leu	Ser	Ile	Gly	Cys	Arg
			100					105					110		
Ile	Thr	Pro	Arg	Trp	Tyr	Gly	Ala	Val	Phe	Met	Ala	Pro	Val	Ser	Ser
		115					120					125			
Val	Gly	Tyr	Ala	Ile	Thr	Leu	Asp	Gln	Asp	Ile	Thr	Gly	Thr	Gly	Ser
	130					135					140				
Ser	Thr	Val	Ser	Ser	Leu	Phe	Glu	Gly	Glu	Gly	Gly	Leu	Ser	Lys	Met
145					150					155					160
Gly	Ile	Ser	Thr	Ala	Tyr	Arg	Leu	Phe	Lys	Gly	Phe	Ser	Val	Gly	Ala
				165					170					175	
Asn	Leu	Ser	Tyr	Val	Thr	Gly	Thr	Ile	Lys	Gln	Thr	Glu	Thr	Gln	Gly
			180					185					190		
Ser	Ile	Asn	Val	Glu	Glu	Ser	Ser	Tyr	Lys	His	Ala	Phe	Tyr	Ala	Asp
		195					200					205			
Phe	Gly	Leu	Gln	Tyr	Lys	Phe	Ser	Leu	Ser	Arg	Asn	Lys	Tyr	Leu	Val
	210					215					220				
Ala	Gly	Ala	Val	Tyr	Gly	Tyr	Ser	Gln	Asp	Leu	Ala	Gln	Asp	Asn	Thr
225					230					235					240
Leu	Ser	Val	Ser	Ser	Thr	Ser	Gly	Asn	Glu	Ser	Ile	Asp	Glu	Ser	Gln
				245					250					255	
Arg	His	Val	Arg	Gln	Cys	Leu	Pro	Gln	Phe	Val	Gly	Ala	Gly	Leu	Ala
			260					265					270		
Tyr	Asn	Ser	Pro	His	Trp	Thr	Leu	Thr	Val	Glu	Tyr	Lys	Tyr	Thr	Asp
		275					280					285			
Trp	Ser	Arg	Met	Lys	Ser	Ser	Gln	Ser	Asn	Val	Arg	Phe	Glu	Asn	Gln
	290					295					300				
His	Arg	Leu	Ser	Ala	Gly	Thr	Ala	Tyr	Thr	Ala	Gly	Asn	Ile	Tyr	Arg
305					310					315					320
Asn	Pro	Val	Lys	Leu	Leu	Leu	Gly	Ala	Gly	Val	Ser	Asn	Ser	Tyr	Ile

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
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<213> B.fragilis

<400> 7401

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Leu	Phe	Phe	Ile	Thr	Leu	Phe	Ile	Ser	Leu	Leu	Ala	Ser	Cys	Arg	Asp
		35					40					45			
Glu	Leu	Ser	Thr	Ala	Gly	Gly	Lys	Trp	Val	Glu	Ser	Ser	Leu	Arg	Thr
	50					55				60					
Ile	Gln	Thr	Asp	Thr	Cys	Thr	Val	Arg	Leu	Ser	Thr	Ile	Leu	Ser	Asp
65					70				75					80	
Ser	Leu	Ala	Thr	Ser	Gly	Asp	Thr	Val	Cys	Gln	Ile	Gly	Thr	Ile	Asp
				85					90					95	
Asp	Pro	Val	Trp	Gly	Lys	Ile	Glu	Ala	Phe	Tyr	Val	Glu	Tyr	Asp	
			100					105					110		
Val	Pro	Thr	Val	Ser	Phe	Ser	Glu	Asn	Ala	Asp	Tyr	Arg	Phe	Asp	Ser
		115					120					125			
Ile	Thr	Ile	Arg	Phe	Tyr	Ser	Ser	Gly	Asn	Tyr	Leu	Gly	Asp	Thr	Leu
	130					135					140				
Ser	Pro	Gln	Arg	Ile	Ser	Leu	His	Ser	Leu	Ser	Glu	Asn	Leu	Ser	Leu
145					150					155					160
Asp	Glu	Gly	Tyr	Leu	Tyr	Thr	Thr	Ser	Lys	Val	Ser	Tyr	His	Ser	Thr
				165					170					175	
Pro	Leu	Ala	Ser	Phe	Thr	Phe	Thr	Pro	Thr	Pro	Gly	Glu	Thr	Ile	Arg
			180					185					190		
Glu	His	Glu	Ile	Arg	Leu	Pro	Asp	Glu	Trp	Gly	Val	Glu	Trp	Phe	Glu
		195					200					205			
His	Phe	Gln	Ala	Gly	Ser	Arg	Glu	Met	Glu	Ser	Gln	Glu	Tyr	Phe	Arg
	210					215					220				
Asp	Tyr	Phe	Lys	Gly	Ile	Ala	Phe	Ile	Pro	Glu	Glu	Gly	Gly	Asn	Cys
225					230					235					240
Val	Asn	Gly	Phe	Met	Val	Asn	Asp	Ser	Ser	Leu	Cys	Ile	Thr	Leu	Tyr
				245					250					255	
Tyr	His	Gln	Thr	Glu	Thr	Asp	Ala	Thr	Glu	Leu	Ser	Ala	Asp	Phe	Leu
			260					265					270		
Pro	Asn	Ser	Asp	Leu	Arg	Phe	Asn	Gln	Val	Ser	Cys	Asp	Arg	Ser	Arg
		275					280					285			
Thr	Ala	Leu	Ser	Ser	Leu	Gln	Ser	Gly	Leu	Asn	Asn	Gly	Leu	Pro	Ser
	290					295					300				
Glu	Lys	Ser	Glu	His	Gln	Ser	Tyr	Leu	Gln	Gly	Leu	Thr	Gly	Met	Tyr
305					310					315					320
Ile	Asn	Ile	Asp	Phe	Pro	Phe	Leu	Asn	Asp	Leu	Arg	Ala	Glu	Gly	Arg

325 330 335
 Leu Val Thr Ile Glu Ser Ala Leu Leu Arg Leu Tyr Pro Val Lys Gly
 340 345 350
 Thr Tyr Gly Lys Gln Tyr Pro Leu Pro Glu Ser Leu Thr Leu Tyr Thr
 355 360 365
 Ala Asp Glu Asn Asn Val Thr Glu Asp Val Val Thr Asp Ile Ser Gly
 370 375 380
 Ser Ser Val Gln Thr Gly Ser Leu Val Thr Asp Glu Met Met Gly Glu
 385 390 395 400
 Asp Thr Tyr Tyr Ser Phe Asp Ile Thr Ser Phe Leu Gln Ser Asn Leu
 405 410 415
 Gly Thr Val Gly Tyr Asn Arg Lys Ile Leu Gln Leu Met Leu Pro Asp
 420 425 430
 Asn Leu Phe Phe Thr Thr Leu Asn Gly Val Val Phe Gly Asp Ala Gly
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<213> B.fragilis

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 35 40 45
 Tyr Asp Met Asp Ala Ser Met Thr Leu Arg Ile Arg Gln Ser Ala Met
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 35 40 45
 Tyr His Ile Ile Lys Pro Glu Ile Asp Phe Pro Val Gly Thr Asp Glu
 50 55 60
 His Asp Glu Lys Val Tyr Ala Lys Ala Ala Glu Asn Phe Arg Leu Phe
 65 70 75 80
 Arg Asp Lys Gly Trp Leu Val Gln Asp Asp Lys Glu Asn Tyr Tyr Ile
 85 90 95
 Tyr Ala Gln Thr Met Asn Gly Lys Thr Gln Tyr Gly Leu Val Val Gly
 100 105 110

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Ala Tyr Val Pro Asp Tyr Met Asn Gly Val Ile Lys Lys His Glu Leu
 115 120 125
 Thr Arg Arg Asp Lys Glu Glu Asp Arg Met Lys His Val Arg Val Asn
 130 135 140
 Asn Ala Asn Ile Glu Pro Val Phe Phe Ala Tyr Pro Asp Asn Ala Val
 145 150 155 160
 Leu Asp Ala Ile Ile Arg Lys Tyr Thr Ala Gln Lys Pro Val Tyr Asp
 165 170 175
 Phe Ile Ala Pro Gly Asp Gly Phe Gly His Thr Phe Trp Val Ile Asp
 180 185 190
 Asn Ser Glu Asp Ile Ala Val Ile Thr Lys Glu Phe Ala Ala Met Pro
 195 200 205
 Ala Leu Tyr Ile Ala Asp Gly His His Arg Ser Ala Ala Ala Ala Leu
 210 215 220
 Val Gly Ala Glu Lys Ala Lys Gln Asn Pro Asn His Arg Gly Asp Glu
 225 230 235 240
 Glu Tyr Asn Tyr Phe Met Ala Val Cys Phe Pro Ala Asn Gln Leu Thr
 245 250 255
 Ile Ile Asp Tyr Asn Arg Val Val Lys Asp Leu Asn Gly Leu Thr Pro
 260 265 270
 Ala Glu Phe Leu Thr Ala Leu Gly Lys Asn Phe Glu Ile Glu Glu Lys
 275 280 285
 Gly Lys Glu Ile Tyr Lys Pro Asn Ala Leu His Asn Phe Ala Leu Tyr
 290 295 300
 Leu Asp Gly Lys Trp Tyr Ser Leu Thr Ala Lys Pro Gly Thr Tyr Asp
 305 310 315 320
 Asp Asn Asp Pro Ile Gly Val Leu Asp Val Thr Ile Ser Ser Asn Leu
 325 330 335
 Ile Leu Asp Glu Ile Leu Gly Ile Lys Asp Leu Arg Ser Asp Arg Arg
 340 345 350
 Ile Asp Phe Val Gly Gly Ile Arg Gly Leu Gly Glu Leu Ser Arg Arg
 355 360 365
 Val Asp Ser Gly Glu Met Lys Val Ala Leu Ala Leu Tyr Pro Val Ser
 370 375 380
 Met Lys Gln Leu Met Asp Ile Ala Asp Thr Gly Asn Ile Met Pro Pro
 385 390 395 400
 Lys Thr Thr Trp Phe Glu Pro Lys Leu Arg Ser Gly Leu Val Ile His
 405 410 415
 Glu Leu Glu

<210> 7404
 <211> 211
 <212> PRT
 <213> B.fragilis

<400> 7404
 Asn Met Ser Gln Leu Phe Ser Lys Lys Asn Lys Glu Val Phe Ala Thr
 1 5 10 15
 Pro Leu Gly Leu Asn Asn Pro Val Thr Val Gln Val Leu Gly Ile Cys
 20 25 30
 Ser Ala Leu Ala Val Thr Ala Lys Leu Glu Pro Ala Ile Val Met Gly
 35 40 45
 Leu Ser Val Thr Val Ile Thr Ala Phe Ser Asn Val Val Ile Ser Leu
 50 55 60
 Leu Arg Lys Thr Ile Pro Asn Arg Ile Arg Ile Ile Val Gln Leu Val
 65 70 75 80
 Val Val Ala Ala Leu Val Thr Ile Val Ser Glu Val Leu Lys Ala Phe
 85 90 95

Ala Tyr Asp Val Ser Val Gln Leu Ser Val Tyr Val Gly Leu Ile Ile
 100 105 110
 Thr Asn Cys Ile Leu Met Gly Arg Leu Glu Ala Phe Ala Met Ala Asn
 115 120 125
 Gly Pro Trp Glu Ser Phe Leu Asp Gly Val Gly Asn Gly Leu Gly Tyr
 130 135 140
 Ala Lys Ile Leu Ile Ile Val Ala Phe Phe Arg Glu Leu Leu Gly Ser
 145 150 155 160
 Gly Thr Leu Leu Asn Phe Arg Ile Ile Pro Glu Ser Phe Tyr Lys Met
 165 170 175
 Gly Tyr Ile Asn Asn Gly Leu Met Leu Met Pro Pro Met Ala Leu Ile
 180 185 190
 Ile Cys Ala Cys Ile Ile Trp Tyr Gln Arg Ser Arg Cys Lys Glu Leu
 195 200 205
 Gln Glu Lys
 210

<210> 7405
 <211> 164
 <212> PRT
 <213> B.fragilis

<400> 7405

Phe Val Ala Asn Ser Phe Cys Val Pro Asp Tyr Ser Asn Met Tyr Val
 1 5 10 15
 Phe Pro Tyr Leu Cys Arg Arg Ser Asn Tyr Tyr Gln Glu Thr Asp Met
 20 25 30
 Gly Arg Lys Glu Glu Tyr Lys Leu Gln Asn Glu Gln Phe Met Gln Thr
 35 40 45
 Leu Arg Thr Glu Ala Asp Val His Glu Leu Pro Cys Gly Ile Leu Tyr
 50 55 60
 Lys Val Leu Glu Glu Gly Thr Gly Ala Ala Thr Pro Arg Ser Asn Ser
 65 70 75 80
 Val Val Ser Val His Tyr Lys Gly Thr Leu Ile Asn Gly Arg Glu Phe
 85 90 95
 Asp Asn Ser Trp Lys Arg Asn Cys Pro Glu Ala Phe Arg Leu Asn Glu
 100 105 110
 Val Ile Glu Gly Trp Gln Ile Ala Leu Gln Lys Met Arg Val Gly Asp
 115 120 125
 His Trp Ile Val Tyr Ile Pro Tyr Asn Met Gly Tyr Gly Thr Arg Thr
 130 135 140
 Ser Gly Pro Ile Pro Ala Phe Ser Thr Leu Ile Phe Glu Val Gln Leu
 145 150 155 160
 Leu Gly Ile Ala

<210> 7406
 <211> 429
 <212> PRT
 <213> B.fragilis

<400> 7406

Ser Lys Lys Asn Lys Thr Met Thr Ser Leu Ile Leu Ala Ser Ile Gly
 1 5 10 15
 Val Phe Leu Val Val Ile Ile Leu Leu Val Ile Ile Leu Leu Val Ala
 20 25 30
 Lys Ser Tyr Leu Ser Pro Ser Gly Glu Val Thr Ile Thr Met Asn Gly
 35 40 45
 Glu Gln Gln Leu Lys Thr Ser Gln Gly Gly Thr Leu Leu Gly Thr Leu

50 55 60
 Ser Ala Asn Asn Val Phe Leu Ser Ser Ala Cys Gly Gly Lys Gly Ser
 65 70 75 80
 Cys Gly Gln Cys Arg Cys Gln Val Leu Glu Gly Gly Gly Glu Ile Leu
 85 90 95
 Pro Thr Glu Thr Gly Phe Phe Ser Arg Lys Glu Gln Ala Asp His Trp
 100 105 110
 Arg Leu Gly Cys Gln Val Lys Val Lys Gln Asp Met Ser Ile Lys Ile
 115 120 125
 Asp Glu Ser Ile Leu Gly Val Lys Glu Trp Glu Cys Glu Val Ile Ser
 130 135 140
 Asn Lys Asn Val Ala Thr Phe Ile Lys Glu Phe Ile Val Ala Leu Pro
 145 150 155 160
 Pro Gly Glu His Met Asp Phe Val Pro Gly Ser Tyr Ala Gln Ile Lys
 165 170 175
 Ile Pro Thr Phe Ser Met Asp Tyr Asp Lys Asp Ile Asp Lys Ser Leu
 180 185 190
 Ile Gly Asp Glu Tyr Leu Pro Ala Trp Glu Lys Phe Gly Leu Leu Gly
 195 200 205
 Leu Lys Cys Arg Asn Asp Glu Pro Thr Ile Arg Ala Tyr Ser Met Ala
 210 215 220
 Asn Tyr Pro Ala Glu Gly Asp Arg Ile Met Leu Thr Val Arg Ile Ala
 225 230 235 240
 Thr Pro Pro Phe Lys Pro Lys Asp Gln Gly Pro Gly Phe Met Asp Val
 245 250 255
 Met Pro Gly Ile Ala Ser Ser Tyr Ile Phe Thr Leu Lys Pro Gly Asp
 260 265 270
 Lys Val Thr Met Ser Gly Pro Tyr Gly Asp Phe His Pro Ile Leu Asp
 275 280 285
 Ser Lys Asn Glu Met Met Trp Ile Gly Gly Gly Ala Gly Met Ala Pro
 290 295 300
 Leu Arg Ala Gln Ile Met His Leu Thr Lys Thr Leu His Ile Thr Asp
 305 310 315 320
 Arg Thr Met Asn Tyr Phe Tyr Gly Ala Arg Ala Leu Asn Glu Val Phe
 325 330 335
 Tyr Leu Glu Asp Phe Leu Gln Ile Glu Lys Asp Phe Pro Asn Phe Lys
 340 345 350
 Phe His Leu Ala Leu Asp Arg Pro Asp Pro Ala Ala Asp Ala Ala Gly
 355 360 365
 Val Lys Tyr Thr Ala Gly Phe Val His Asn Val Ile Tyr Glu Thr Tyr
 370 375 380
 Leu Lys Asn His Glu Ala Pro Glu Asp Ile Glu Tyr Tyr Met Cys Gly
 385 390 395 400
 Pro Gly Pro Met Ser Lys Ala Val Glu Lys Met Leu Asp Asp Leu Gly
 405 410 415
 Val Pro Ser Lys Asn Leu Met Phe Asp Asn Phe Gly Gly
 420 425

<210> 7407

<211> 152

<212> PRT

<213> B.fragilis

<400> 7407

Lys Lys Ile Asp Arg Met Ala Phe Glu Ala Thr Lys Arg Glu Trp Ser
 1 5 10 15
 Glu Leu Tyr Val Phe Phe Arg Leu Leu Ala Asp Gly Lys Val Ser Leu
 20 25 30
 Gly Thr Pro Gln Ala Lys Lys Glu Asp Glu Lys Tyr Arg Pro Ile Ala

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<210> 7408
<211> 471
<212> PRT
<213> B.fragilis
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Ser 1	Phe	Gly	Asp	His 5	His	Lys	Arg	Asn	Cys 10	Phe	Arg	Val	Val	Arg	Lys 15
Gln	Phe	Phe	Phe	Ile	Phe	Val	Ser	Leu	Phe	Lys	Asn	Val	Glu	Lys	Thr
			20					25					30		
Met	Asn	Gly	Leu	Lys	Asp	Ile	Leu	Glu	Arg	Leu	Lys	Ile	Glu	Gln	Leu
		35					40					45			
Asn	Pro	Met	Gln	Glu	Ala	Ser	Val	Glu	Ala	Phe	Asp	Lys	Gly	Gly	Glu
	50					55					60				
Asp	Leu	Ile	Leu	Leu	Ser	Pro	Thr	Gly	Ser	Gly	Lys	Thr	Leu	Ala	Phe
65					70					75					80
Leu	Leu	Pro	Leu	Val	Gly	Ser	Leu	Lys	Ala	Asp	Val	Lys	Gly	Val	Gln
				85					90					95	
Ala	Val	Val	Leu	Val	Pro	Ser	Arg	Glu	Leu	Ala	Leu	Gln	Ile	Glu	Gln
			100					105					110		
Val	Phe	Lys	Ala	Met	Gly	Thr	Glu	Phe	Lys	Ala	Met	Ser	Cys	Tyr	Gly
		115					120					125			
Gly	Arg	Pro	Ala	Met	Glu	Glu	His	Arg	Thr	Met	Lys	Gly	Met	Gln	Pro
	130				135						140				
Ala	Val	Ile	Ile	Gly	Thr	Pro	Gly	Arg	Met	Asn	Asp	His	Leu	Ser	Lys
145					150					155					160
Gln	Asn	Phe	Asp	Ala	Ser	Thr	Val	Ser	Leu	Leu	Val	Ile	Asp	Glu	Phe
				165					170					175	
Asp	Lys	Cys	Leu	Glu	Phe	Gly	Phe	Gln	Glu	Glu	Met	Ala	Thr	Val	Ile
			180					185					190		
Gly	Gln	Leu	Pro	Asp	Leu	Lys	Arg	Arg	Phe	Leu	Thr	Ser	Ala	Thr	Asp
	195						200					205			
Ala	Glu	Glu	Ile	Pro	Gln	Phe	Thr	Gly	Leu	Asn	Arg	Thr	Ile	Lys	Leu
	210					215					220				
Asp	Phe	Leu	Thr	Asn	Asp	Val	Glu	Glu	Ser	Arg	Leu	Arg	Leu	Met	Lys
225				230						235					240
Val	Val	Ser	Pro	Ala	Lys	Asp	Lys	Ile	Glu	Thr	Leu	Tyr	Lys	Leu	Leu
				245					250					255	
Cys	Thr	Leu	Gly	Ser	Ser	Ser	Ser	Ile	Val	Phe	Cys	Asn	His	Arg	Asp
			260					265					270		
Ala	Val	Asp	Arg	Val	Ser	Ala	Leu	Leu	Thr	Glu	Lys	Gly	Val	Ser	Asn
		275					280					285			
Glu	Arg	Phe	His	Gly	Gly	Met	Glu	Gln	Pro	Asp	Arg	Glu	Arg	Ala	Leu

[illegible]

290	295	300
Tyr Lys Phe Arg Asn Gly	Ser Cys Pro Val Leu	Val Ser Thr Asp Leu
305	310	315
Ala Ala Arg Gly Leu Asp	Ile Pro Glu Val Glu	His Ile Ile His Tyr
	325	330
His Leu Pro Val Asn Glu	Glu Ala Phe Thr	His Arg Asn Gly Arg Thr
	340	345
Ala Arg Trp Asp Ala Thr	Gly Thr Ser Tyr Leu	Ile Leu Asn Pro Glu
	355	360
Glu His Val Pro Asp Tyr	Ile Pro Ser Glu Leu	Glu Ile Phe Asp Leu
	370	375
Pro Glu Asn Thr Pro Arg	Pro Ala Lys Pro Gln	Trp Val Thr Ile Tyr
385	390	395
Ile Gly Lys Gly Lys Lys	Asp Lys Leu Ser Lys	Ile Asp Ile Ala Gly
	405	410
Phe Leu Tyr Lys Lys Gly	Asn Leu Ala Arg Glu	Asp Val Gly Ala Ile
	420	425
Asp Val Lys Asp His Tyr	Ala Phe Val Ala Val	Arg Arg Pro Lys Met
	435	440
Lys Gln Leu Leu Thr Leu	Ile Arg Gly Glu Lys	Ile Lys Gly Met Lys
	450	455
Thr Val Ile Glu Glu Ala	Asp	
465	470	

<210> 7409

<211> 183

<212> PRT

<213> B.fragilis

<400> 7409

Tyr Gly Leu Trp His Thr	Tyr Gln Trp Pro Asp Ser Gly	Phe Phe Asn
1	5	10
Phe Asp Phe Arg Gly Thr	Ile Thr Gly Tyr Ser Leu	Asn His Gln Lys
	20	25
Lys Ile Pro Asp Ile Met Thr	Glu Asp Thr Tyr Lys Thr	Ile Thr Glu
	35	40
Val Ser Glu Gly Thr Tyr Thr	Glu Lys Arg Ser Lys Phe	Ile Ala Ile
	50	55
Ala Leu Pro Val Arg Thr Leu	Glu Glu Ile Lys Val His Leu	Glu Ala
65	70	75
Tyr Gln Lys Lys Tyr Tyr Asp	Ala Arg His Val Cys Tyr	Ala Tyr Met
	85	90
Leu Gly His Glu Arg Lys Asn	Phe Arg Ala Asn Asp Asn	Gly Glu Pro
	100	105
Ser Gly Thr Ala Gly Lys Pro	Ile Leu Gly Gln Ile Asn Ser	Thr Glu
	115	120
Leu Thr Asp Ile Leu Ile Met	Trp Val Arg Tyr Ser Lys	Gly Ile Lys
	130	135
Leu Gly Thr Ser Gly Leu Ile	Val Ala Tyr Arg Ala Ala	Ala Arg Gly
145	150	155
Pro Ser Leu His Ala Pro Trp	Glu Arg Lys Leu Trp Thr	Arg Lys Tyr
	165	170
Pro Tyr Phe Ser Ser Ile Leu		
	180	

<210> 7410

<211> 214

<212> PRT

<213> B.fragilis

<400> 7410

Glu Ser Lys Arg Lys Ile Met Glu Gln Leu Leu Ser Leu Phe Val Arg
 1 5 10 15
 Ser Ile Phe Val Asp Asn Met Ile Phe Ala Phe Phe Leu Gly Met Cys
 20 25 30
 Ser Tyr Leu Ala Val Ser Lys Asn Val Lys Thr Ala Val Gly Leu Gly
 35 40 45
 Ile Ala Val Thr Phe Val Leu Val Val Thr Leu Pro Val Asn Tyr Leu
 50 55 60
 Leu Gln Thr Lys Val Leu Ala Ala Asn Ala Ile Ile Glu Gly Val Asp
 65 70 75 80
 Leu Ser Phe Leu Ser Phe Ile Leu Phe Ile Gly Arg Met Ala Gly Phe
 85 90 95
 Gly Gln Leu Val Glu Met Val Val Glu Arg Phe Ser Pro Ser Leu Tyr
 100 105 110
 Ala Ser Leu Gly Ile Phe Leu Pro Leu Ile Ala Val Asn Cys Ala Ile
 115 120 125
 Met Gly Ala Ser Leu Phe Met Gln Gln Arg Ile Thr Met Asp Pro Ser
 130 135 140
 Asn Pro Gln Ala Ile Thr Gly Val Gly Ser Ala Val Val Tyr Ala Leu
 145 150 155 160
 Gly Ser Gly Ile Gly Trp Leu Leu Ala Ile Val Gly Leu Ala Ala Ile
 165 170 175
 Arg Glu Lys Met Ala Tyr Ser Asp Val Pro Ala Pro Leu Lys Gly Leu
 180 185 190
 Gly Ile Thr Phe Ile Thr Val Gly Leu Met Ala Met Ala Phe Met Cys
 195 200 205
 Phe Ser Gly Leu Lys Leu
 210

<210> 7411

<211> 84

<212> PRT

<213> B.fragilis

<400> 7411

Lys Leu Arg Gly Pro Phe Gln Pro Arg Gly Glu Asp Gly Ala Glu Ile
 1 5 10 15
 Ala Gly Ala Ala Phe Gln Asn Glu Phe Ser Gly Lys Lys Val Leu Lys
 20 25 30
 Asp Gly Gln Val Ala Leu Ala Val Glu Lys Asn Gly Lys Val Thr Asp
 35 40 45
 Pro Ala Tyr Gln Val Asp Gly Ile Ser Gly Gly Thr Ile Thr Ser Lys
 50 55 60
 Gly Val Asp Ala Met Ile Lys Ala Cys Leu Ser Gln Tyr Asp Lys Phe
 65 70 75 80
 Leu Thr Asn Asn

<210> 7412

<211> 365

<212> PRT

<213> B.fragilis

<400> 7412

Arg Asn Cys Ile Thr Lys Asn Thr His Gln Met Lys Lys His Asn Phe
 1 5 10 15
 Ser Ala Gly Pro Ser Ile Leu Pro Arg Glu Val Ile Glu Glu Thr Ala

	20		25		30										
Lys	Ala	Ile	Leu	Asp	Phe	Asn	Gly	Ser	Gly	Leu	Ser	Val	Leu	Glu	Val
	35						40					45			
Ser	His	Arg	Gly	Lys	Asp	Phe	Gln	Ala	Val	Met	Asp	Glu	Ala	Val	Ala
	50					55					60				
Leu	Phe	Lys	Glu	Ile	Leu	Asn	Ile	Pro	Glu	Gly	Tyr	Ser	Val	Leu	Phe
65					70				75					80	
Leu	Gly	Gly	Gly	Ala	Ser	Met	Gln	Phe	Cys	Met	Val	Pro	Tyr	Asn	Phe
			85						90					95	
Leu	Glu	Lys	Lys	Ala	Ala	Tyr	Leu	Asn	Thr	Gly	Val	Trp	Ala	Lys	Lys
			100					105					110		
Ala	Met	Lys	Glu	Ala	Lys	Gly	Phe	Gly	Glu	Val	Val	Glu	Val	Ala	Ser
	115						120					125			
Ser	Ala	Asp	Ala	Asn	Tyr	Thr	Phe	Ile	Pro	Lys	Asp	Phe	Thr	Ile	Pro
	130					135					140				
Ala	Asp	Ala	Asp	Tyr	Phe	His	Val	Thr	Thr	Asn	Asn	Thr	Ile	Tyr	Gly
145					150					155				160	
Thr	Glu	Leu	Lys	Gly	Asp	Leu	Asp	Ser	Pro	Val	Pro	Met	Val	Ala	Asp
				165					170					175	
Met	Ser	Ser	Asp	Ile	Phe	Ser	Arg	Pro	Val	Asp	Val	Ser	Lys	Tyr	Ile
			180					185					190		
Cys	Ile	Tyr	Gly	Gly	Ala	Gln	Lys	Asn	Leu	Ala	Pro	Ser	Gly	Val	Thr
	195					200						205			
Phe	Val	Ile	Val	Lys	Asp	Asp	Ala	Val	Gly	Lys	Val	Ser	Arg	Tyr	Ile
	210					215					220				
Pro	Ser	Met	Leu	Asn	Tyr	Lys	Thr	His	Ile	Asp	Gly	Gly	Ser	Met	Phe
225				230						235				240	
Asn	Thr	Pro	Pro	Val	Leu	Pro	Ile	Tyr	Ser	Ala	Met	Gln	Thr	Leu	Arg
				245					250					255	
Trp	Ile	Lys	Ala	Gln	Gly	Gly	Val	Lys	Glu	Met	Asp	Arg	Arg	Ala	Thr
			260				265					270			
Glu	Lys	Ala	Asp	Met	Leu	Tyr	Ala	Glu	Ile	Asp	Arg	Asn	Lys	Met	Phe
	275						280					285			
Val	Gly	Thr	Ala	Ala	Lys	Glu	Asp	Arg	Ser	Arg	Met	Asn	Ile	Cys	Phe
	290					295					300				
Val	Met	Ala	Pro	Glu	Tyr	Lys	Asp	Leu	Glu	Ala	Asp	Phe	Leu	Lys	Phe
305					310					315				320	
Ala	Thr	Asp	Lys	Gly	Met	Ser	Gly	Ile	Lys	Gly	His	Arg	Ser	Val	Gly
			325						330					335	
Gly	Phe	Arg	Ala	Ser	Cys	Tyr	Asn	Ala	Met	Pro	Lys	Glu	Ser	Val	Gln
			340				345						350		
Ala	Leu	Ile	Asp	Cys	Met	Gln	Glu	Phe	Glu	Lys	Leu	His			
	355					360						365			

<210> 7413

<211> 327

<212> PRT

<213> B.fragilis

<400> 7413

Met	Thr	Ala	Phe	Gly	Val	Cys	Gly	Ile	Leu	Cys	Gly	Glu	Phe	Ser	Gln
1			5					10				15			
Asn	Arg	Ile	Arg	Glu	Met	Lys	Ile	Leu	Val	Ala	Thr	Glu	Lys	Pro	Phe
		20					25					30			
Ala	Lys	Ile	Ala	Val	Asp	Gly	Ile	Lys	Lys	Glu	Ile	Glu	Gly	Ala	Gly
	35					40					45				
Phe	Glu	Leu	Ala	Leu	Leu	Glu	Lys	Tyr	Thr	Asp	Lys	Ala	Gln	Leu	Leu
50					55					60					
Asp	Ala	Val	Lys	Asp	Ala	Asn	Ala	Ile	Ile	Ile	Arg	Ser	Asp	Ile	Ile

65		70		75		80									
Asp	Ala	Glu	Val	Leu	Asp	Ala	Ala	Lys	Glu	Leu	Lys	Ile	Val	Val	Arg
		85							90					95	
Ala	Gly	Ala	Gly	Tyr	Asp	Asn	Val	Asp	Leu	Asn	Ala	Ala	Thr	Ala	His
		100						105					110		
Gly	Val	Cys	Val	Met	Asn	Thr	Pro	Gly	Gln	Asn	Ser	Asn	Ala	Val	Ala
		115					120					125			
Glu	Leu	Val	Phe	Gly	Leu	Leu	Val	Tyr	Ala	Val	Arg	Asn	Phe	Tyr	Asn
		130				135					140				
Gly	Thr	Ser	Gly	Thr	Glu	Leu	Met	Gly	Lys	Lys	Leu	Gly	Ile	His	Ala
145					150					155					160
Tyr	Gly	Asn	Val	Gly	Arg	Asn	Val	Ala	Arg	Ile	Ala	Lys	Gly	Phe	Gly
				165					170					175	
Met	Glu	Leu	Tyr	Ala	Tyr	Asp	Ala	Phe	Cys	Pro	Lys	Asp	Val	Ile	Glu
			180					185					190		
Lys	Asp	Gly	Val	Lys	Ala	Val	Asp	Ser	Ala	Glu	Glu	Leu	Tyr	Lys	Thr
		195					200					205			
Cys	Asn	Ile	Val	Ser	Leu	His	Ile	Pro	Ala	Thr	Ala	Glu	Thr	Lys	Asn
		210				215					220				
Ser	Ile	Asn	His	Asp	Leu	Leu	Ala	Asn	Met	Pro	Lys	Gly	Ala	Ile	Leu
225					230					235					240
Val	Asn	Thr	Ala	Arg	Lys	Glu	Val	Ile	Asn	Glu	Asp	Glu	Leu	Ile	Gln
				245					250					255	
Leu	Met	Glu	Glu	Arg	Pro	Asp	Phe	Lys	Tyr	Ile	Thr	Asp	Ile	Met	Pro
		260					265						270		
Ala	Ala	Asn	Thr	Lys	Phe	Ala	Glu	Leu	Phe	Ala	Gly	Arg	Tyr	Phe	Ser
		275					280					285			
Thr	Pro	Lys	Lys	Met	Gly	Ala	Gln	Thr	Ala	Glu	Ala	Asn	Ile	Asn	Ala
		290				295					300				
Gly	Ile	Ala	Ala	Ala	Arg	Gln	Ile	Val	Gly	Phe	Leu	Lys	Glu	Gly	Cys
305					310				315						320
Glu	Lys	Phe	Arg	Val	Asn	Lys									
				325											

<210> 7414

<211> 110

<212> PRT

<213> B.fragilis

<400> 7414

Ile	Val	Glu	Phe	Tyr	Asn	Leu	Arg	Gly	Gly	Lys	Glu	Arg	Ile	Phe	Asp
1				5					10					15	
Asp	Met	Asn	Asn	Gly	Phe	Gly	Trp	Ser	Arg	Leu	Pro	Lys	Ser	Phe	Met
			20					25					30		
Ala	Glu	Asn	Thr	Val	Phe	Leu	Leu	Leu	Thr	Ala	Leu	Ile	His	Asn	Phe
			35				40					45			
Tyr	Lys	Thr	Ile	Met	Ser	Arg	Leu	Asp	Thr	Lys	Ala	Phe	Gly	Leu	Lys
		50				55					60				
Lys	Thr	Ser	Arg	Ile	Lys	Ala	Phe	Val	Phe	Arg	Phe	Ile	Ser	Val	Pro
65					70				75						80
Ala	Lys	Trp	Ile	Met	Thr	Ala	Arg	Gln	Tyr	Val	Leu	Asn	Ile	Tyr	Thr
				85					90					95	
Glu	Asn	Arg	Ala	Tyr	Ala	Lys	Pro	Phe	Lys	Thr	Glu	Phe	Gly		
			100					105					110		

<210> 7415

<211> 86

<212> PRT

<213> B.fragilis

<400> 7415

Ile	Val	Thr	Leu	Cys	Val	Leu	Thr	Phe	Lys	Leu	Leu	Tyr	Gln	Met	Asp
1				5					10					15	
Lys	Asn	Glu	Ile	Gly	Leu	Asn	Ala	Gly	Lys	Val	Trp	Gln	Leu	Leu	Ser
		20						25					30		
Asn	Asn	Asp	Lys	Trp	Ser	Tyr	Gly	Asn	Leu	Lys	Lys	Lys	Ser	Gly	Leu
		35					40					45			
Lys	Asp	Lys	Asp	Leu	Gly	Ala	Ala	Leu	Gly	Trp	Leu	Ala	Arg	Glu	Asp
	50					55					60				
Lys	Ile	Glu	Phe	Glu	Gln	Glu	Glu	Glu	Glu	Leu	Tyr	Val	Tyr	Leu	Cys
65					70					75					80
Val	Asn	Val	Tyr	Ile	Gly										
				85											

<210> 7416

<211> 61

<212> PRT

<213> B.fragilis

<400> 7416

Ile	Tyr	Glu	Pro	Phe	Ser	Pro	Gly	Lys	Leu	Ala	Asn	Lys	Glu	Trp	Asp
1				5					10					15	
Gly	Arg	Ser	Asp	Gly	Glu	Ile	Cys	Arg	Lys	Leu	Glu	Glu	Lys	Lys	Gly
			20					25					30		
Asp	Ile	Ala	Gly	His	Asn	Arg	Asn	Ala	Leu	Pro	Gly	Ser	Arg	Arg	Thr
		35					40					45			
Tyr	Pro	Asp	Thr	Phe	Leu	Ser	Val	Pro	Ser	Gln	Asn	Thr			
	50					55					60				

<210> 7417

<211> 271

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (271)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7417

Tyr	Asp	Met	Ala	Lys	Ile	Gln	Ile	Lys	Ser	Glu	Lys	Leu	Thr	Pro	Phe
1				5					10					15	
Gly	Gly	Ile	Phe	Ser	Ile	Met	Glu	Lys	Phe	Asp	Ser	Met	Leu	Ser	Pro
			20					25					30		
Val	Ile	Asp	Ser	Thr	Leu	Gly	Gln	Arg	Cys	Ser	Ser	Ile	Phe	Gly	Tyr
		35					40					45			
Gln	Phe	Ser	Glu	Ile	Val	Arg	Ser	Leu	Met	Ser	Val	Tyr	Phe	Cys	Gly
	50					55					60				
Gly	Ser	Cys	Val	Glu	Asp	Val	Thr	Ser	Gln	Leu	Met	Arg	His	Leu	Ser
65					70					75					80
Tyr	His	Pro	Thr	Leu	Arg	Thr	Cys	Ser	Ser	Asp	Thr	Ile	Leu	Arg	Ala
				85					90					95	
Ile	Lys	Glu	Leu	Thr	Gln	Glu	Asn	Ile	Ser	Tyr	Thr	Ser	Asp	Gln	Gly
			100					105					110		
Lys	Thr	Tyr	Asp	Phe	Asn	Thr	Ala	Asp	Lys	Leu	Asn	Thr	Leu	Leu	Ile
		115					120					125			
Asn	Ala	Leu	Val	Ser	Thr	Gly	Glu	Leu	Lys	Glu	Ile	Glu	Glu	Tyr	Asp
	130					135						140			

Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Xaa
 260 265 270

<210> 7418
 <211> 175
 <212> PRT
 <213> B.fragilis

<400> 7418

Phe Tyr Phe Tyr Val Phe Ser Phe Gly Gly Thr Ser Val Val Asp Ala
 1 5 10 15
 Gln Thr Lys Gly Ile Val Val Asp Gly Val Lys Gly Arg Ser Leu Ser
 20 25 30
 Asp Val Asn Ile Tyr Leu Gln Lys Asp Ser Val Glu Ile Gly Ser Thr
 35 40 45
 Asp Arg Asn Gly Glu Phe Met Phe Ser Arg Asp Gln Ile Thr Ile Ser
 50 55 60
 Asp Thr Ile Val Phe Ser His Val Gly Tyr Phe Pro Leu Lys Cys Thr
 65 70 75 80
 Leu Ser Glu Leu Gln His Leu Gly Tyr Lys Val Val Leu His Glu His
 85 90 95
 Pro Gln Leu Leu His Glu Val Val Val Ser Gly Glu Arg Pro Pro Phe
 100 105 110
 Phe Leu Glu Trp Thr Ser Leu Ser Pro Leu Pro Lys Pro Leu Tyr Ser
 115 120 125
 Phe Gly Gly Phe Leu His Ala Gly Lys Ile Tyr Val Val Ala Gly Asp
 130 135 140
 Glu Thr Leu Val Arg Met Val Thr Asp Lys His Arg Arg Ser Thr Ser
 145 150 155 160
 Leu Leu Ser Phe Thr Met Thr Ala Cys Met Arg Trp Glu Glu Leu
 165 170 175

<210> 7419
 <211> 115
 <212> PRT
 <213> B.fragilis

<400> 7419

Ser Val Lys Tyr Ala Met Val Lys Val Ile Leu Phe Pro Ser Leu Leu
 1 5 10 15
 Phe Cys Phe Ile Ile Asp Ala His Ser Tyr Phe Asn Thr Ile Tyr Arg
 20 25 30
 Asn Gln Tyr Ile Asn Lys Arg Gly Asn Glu Lys Lys Thr Glu Arg Pro
 35 40 45
 Asn Thr Leu Asp Pro Leu Arg Ile Asn Leu Thr Tyr Val Asn Gly Asn

50 55 60
 Tyr Ile Ser Met Arg Ser Tyr Ile Tyr Pro Leu Thr Val Thr Pro Thr
 65 70 75 80
 His Tyr Val Lys Arg Ile Pro Pro Val Glu Lys Ser Cys Ile Phe His
 85 90 95
 Ile Gln Ser Ser Gln Phe Val Tyr Ala His Cys Ile Cys Phe Asn Met
 100 105 110
 Val Asp Leu
 115

<210> 7420
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 7420
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 7421
 <211> 113
 <212> PRT
 <213> B.fragilis

<400> 7421
 Ile Lys Leu Asn Tyr Ser Val Ala Glu Leu Arg Phe Ile Lys Thr Phe
 1 5 10 15
 Pro Gly Tyr Tyr Tyr Leu Gln Tyr Thr Lys Glu Gln Val Leu Gly
 20 25 30
 Glu Ile Trp Ser Arg Lys Thr Asn Gln Ile Val Ser Arg Ser Ile Leu
 35 40 45
 Thr Arg Pro Asn Gln Phe Thr Thr Leu Arg Gly Ile Arg Phe Arg Phe
 50 55 60
 Pro Ser Gly Thr Val Ile Arg Leu Leu Pro Asp Tyr Ile Ser Gly Asn
 65 70 75 80
 Lys Ile Ala Phe Phe Ile Pro Ala Asp Glu Ala Met Gly Glu Ile Pro
 85 90 95
 Gly Ile Lys Ile Arg Glu Asp Asp Asn Pro Ile Leu Met Val Met Glu
 100 105 110
 Leu

<210> 7422
 <211> 161
 <212> PRT
 <213> B.fragilis

<400> 7422
 Arg Lys Val Asp Arg Arg Asp Arg Arg Gly Ala Glu Thr Phe Ala Gly

1	5	10	15
Lys Cys Glu Gly Lys Val Ala Ser Tyr Pro Gln Lys Asp Leu Cys Ile			
20	25	30	
Asp Glu Arg Lys Gly Val Met Met Glu Thr Asn Lys Lys His Thr Glu			
35	40	45	
Asn Ala Leu Lys Gln Ala Leu Gln Arg Arg Gln Pro Gly Arg Leu Pro			
50	55	60	
Ser Asn Phe Asn Tyr Arg Met Met Glu Gln Ile Arg Leu Glu Ala Glu			
65	70	75	80
Lys Gln Gln Lys Arg Lys Glu Arg Val Met Leu Cys Gly Met Ile Ala			
85	90	95	
Gly Ile Leu Leu Leu Leu Gly Val Gly Val Tyr Thr Leu Val Phe Lys			
100	105	110	
Leu Glu Phe Asn Phe Lys Glu Tyr Leu Ser Gly Met Asp Phe Ser His			
115	120	125	
Ala Asp Ser Ser Leu Leu Ala Phe Tyr Ser Tyr Ile Ala Thr Leu Val			
130	135	140	
Leu Leu Leu Leu Gly Leu Asp Tyr Trp Leu Arg Lys Lys Lys Phe His			
145	150	155	160
Ser			

<210> 7423
 <211> 198
 <212> PRT
 <213> B.fragilis

<400> 7423

Thr Tyr Lys Arg Thr Asp Lys Met Lys Ile Val Ala Phe Asn Gly Ser			
1	5	10	15
Pro Arg Lys Gly Gly Asn Thr Glu Leu Leu Ile Lys Glu Val Phe Lys			
20	25	30	
Pro Ile Gln Glu Ala Gly Ile Glu Thr Glu Leu Val Gln Leu Gly Gly			
35	40	45	
Lys Leu Leu Arg Gly Cys Ala Ser Cys Tyr Thr Cys Phe Lys Thr Lys			
50	55	60	
Asp Gly Lys Cys Ala Ile Lys Thr Asp Pro Met Asn Glu Phe Ile Gln			
65	70	75	80
Lys Ala Gln Glu Ala Asp Gly Ile Ile Leu Ala Ser Pro Thr Tyr Tyr			
85	90	95	
Gly Ser Val Ser Ala Glu Met Lys Ala Phe Met Asp Arg Leu Gly Leu			
100	105	110	
Thr Thr Ile Gly Gln Gly Arg Thr Leu Thr Arg Lys Val Gly Ala Ala			
115	120	125	
Val Ile Ser Val Arg Arg Gly Gly Ala Val Thr Val Tyr Asp Glu Leu			
130	135	140	
Asn Arg Phe Met Leu Gly Ser Gly Met Ile Val Pro Gly Ser Thr Tyr			
145	150	155	160
Trp Asn Phe Gly Ile Gly Glu Met Pro Gly Glu Val Phe Asp Asp Ala			
165	170	175	
Glu Gly Leu Arg Asn Met Lys Asp Leu Gly Val Gln Leu Ala Trp Leu			
180	185	190	
Leu Lys Ala Ile His Asn			
195			

<210> 7424
 <211> 339
 <212> PRT
 <213> B.fragilis

<400> 7424

His Thr Met Arg Ser Phe Ala Ser Asp Asn Asn Ser Gly Val His Pro
 1 5 10 15
 Ala Ile Met Glu Ala Leu Thr Arg Ala Asn Arg Asp His Ala Leu Gly
 20 25 30
 Tyr Gly Asp Asp Leu Trp Thr Glu Ala Val Arg Lys Ile Lys Glu
 35 40 45
 Thr Phe Val Ala Asp Cys Glu Pro Leu Phe Val Phe Asn Gly Thr Gly
 50 55 60
 Ser Asn Val Ile Ala Leu Gln Leu Met Thr Arg Pro Tyr Asn Ser Ile
 65 70 75 80
 Leu Cys Ala Glu Thr Ala His Ile Tyr Val Asp Glu Cys Gly Ser Pro
 85 90 95
 Val Lys Met Thr Gly Cys Gln Ile Arg Pro Ile Ala Thr Pro Asp Gly
 100 105 110
 Lys Leu Thr Pro Gln Leu Ile Thr Pro Tyr Leu His Gly Phe Ala Asp
 115 120 125
 Gln His His Ser Gln Pro Gly Ala Ile Tyr Leu Ser Glu Cys Thr Glu
 130 135 140
 Leu Gly Thr Ile Tyr Thr Pro Asp Glu Leu Lys Ala Ile Thr Ser Leu
 145 150 155 160
 Ala His Gln Tyr Gly Met Trp Val His Met Asp Gly Ala Arg Ile Ala
 165 170 175
 Asn Ala Cys Ala Ser Leu Gly Leu Ser Leu Arg Ala Leu Thr Val Asp
 180 185 190
 Cys Gly Ile Asp Val Leu Ser Phe Gly Gly Thr Lys Asn Gly Leu Met
 195 200 205
 Met Gly Glu Cys Val Ile Val Phe Asp Asp Ser Leu Lys Ser Glu Ala
 210 215 220
 Arg Phe Ile Arg Lys Gln Ser Ala Gln Leu Ala Ser Lys Met Arg Tyr
 225 230 235 240
 Leu Ser Cys Gln Phe Thr Ala Tyr Leu Thr Asp Glu Leu Trp Leu Lys
 245 250 255
 Asn Ala Thr His Ala Asn Ala Met Ala Lys Arg Leu Ala Asp Ala Leu
 260 265 270
 Glu Gln Val Pro Gly Val Arg Phe Thr Gln Lys Val Glu Ser Asn Gln
 275 280 285
 Leu Phe Leu Thr Met Pro Arg Ala Glu Thr Asp Arg Met Leu Gln Thr
 290 295 300
 Tyr Phe Phe Tyr Phe Trp Asn Glu Glu Ala Asp Glu Ile Arg Leu Val
 305 310 315 320
 Thr Ser Phe Asp Thr Thr Glu Glu Asp Ile Asp Thr Phe Ile Arg Ile
 325 330 335
 Leu Lys Asn

<210> 7425

<211> 736

<212> PRT

<213> B.fragilis

<400> 7425

Thr Thr Phe Gly Pro Ser Ser Pro Val Val Lys Thr Ser Ser Tyr Ile
 1 5 10 15
 Thr Ala Gln Thr Val Ile Glu Asn Pro Pro Phe Glu Thr Arg Gln Gly
 20 25 30
 Ser Ile His Thr Ile Ser Lys Ile Glu Leu Ser Pro Thr Glu Thr Arg
 35 40 45

1978	1979	1980	1981	1982
1983	1984	1985	1986	1987
1988	1989	1990	1991	1992
1993	1994	1995	1996	1997
1998	1999	2000	2001	2002
2003	2004	2005	2006	2007
2008	2009	2010	2011	2012
2013	2014	2015	2016	2017
2018	2019	2020	2021	2022
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2153	2154	2155	2156	2157
2158	2159	2160	2161	2162
2163	2164	2165	2166	2167
2168	2169	2170	2171	2172
2173	2174	2175	2176	2177
2178	2179	2180	2181	2182
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2188	2189	2190	2191	2192
2193	2194	2195	2196	2197
2198	2199	2200	2201	2202
2203	2204	2205	2206	2207
2208	2209	2210	2211	2212
2213	2214	2215	2216	2217
2218	2219	2220	2221	2222
2223	2224	2225	2226	2227
2228	2229	2230	2231	2232
2233	2234	2235	2236	2237
2238	2239	2240	2241	2242
2243	2244	2245	2246	2247
2248	2249	2250	2251	2252
2253	2254	2255	2256	2257
2258	2259	2260	2261	2262
2263	2264	2265	2266	2267
2268	2269	2270	2271	2272
2273	2274	2275	2276	2277
2278	2279	2280	2281	2282
2283	2284	2285	2286	2287
2288	2289	2290	2291	2292
2293	2294	2295	2296	2297
2298	2299	2300	2301	2302
2303	2304	2305	2306	2307
2308	2309	2310	2311	2312
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2318	2319	2320	2321	2322
2323	2324	2325	2326	2327
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2353	2354	2355	2356	2357
2358	2359	2360	2361	2362
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2368	2369	2370	2371	2372
2373	2374	2375	2376	2377
2378	2379	2380	2381	2382
2383	2384	2385	2386	

515	520	525
Leu Gln Asp Thr Thr Gly Met Pro Phe Pro Val Val Gly Glu Leu Ile		
530	535	540
Leu Thr Arg Ser Tyr Pro Phe Leu Ala Lys Thr Leu Glu Asn Glu Lys		
545	550	555
Lys Ala Phe Ala Leu Asp Thr Leu Lys Gly Tyr Leu His Asp Pro		
565	570	575
Phe Leu Val Ala Glu Ala Glu Arg Met Tyr Arg Gln Val Tyr Pro Val		
580	585	590
Gln Gly Asn Lys Pro Gln Glu Leu Pro Ala Gly Lys Gly Thr Asp Ile		
595	600	605
Ile Arg Lys Leu Thr Ala Pro Tyr Leu Gly Lys Phe Val Ile Ile Asp		
610	615	620
Phe Trp Ala Thr Ser Cys Gly Pro Cys Arg Ala Ser Ile Glu Gln His		
625	630	635
Ala Asp Leu Arg Lys Asp Tyr Arg Asn Ser Pro Asp Ile Lys Phe Ile		
645	650	655
Phe Val Thr Ser Asn Gln Asp Ser Pro Glu Lys Ala Tyr Glu Asn Tyr		
660	665	670
Val Glu Lys His Leu Lys Glu Glu Thr Ile Phe Arg Leu Pro Gln Ser		
675	680	685
Asp Tyr Asn Tyr Leu Arg Glu Leu Phe His Phe Asn Gly Ile Pro Arg		
690	695	700
Tyr Val Leu Leu Asp Arg Asp Gly Lys Leu Leu Asp Glu Asn Phe Pro		
705	710	715
Met Tyr Asn Ile Glu Leu Phe Leu Lys Glu Ser Lys Ile Arg Lys Glu		
725	730	735

<210> 7426

<211> 186

<212> PRT

<213> B.fragilis

<400> 7426

Pro Asp Ile Met Val Gln Asn Asp Glu Thr Gln Tyr Ile Ala Arg Ile	
1 5 10 15	
Leu Asp Gly Asp Thr Glu Cys Phe Ser Ala Phe Leu Asp Arg Tyr Ser	
20 25 30	
Arg Pro Leu Tyr Val Leu Ile Val Gln Ile Val Gly Cys Ser Glu Asp	
35 40 45	
Ala Glu Glu Leu Val Gln Asp Val Phe Leu Lys Ala Phe Arg Cys Leu	
50 55 60	
Gly Ser Tyr Arg Gly Glu Cys Arg Phe Ser Thr Trp Leu Tyr Arg Ile	
65 70 75 80	
Ala Tyr Thr Thr Ala Val Ser Ala Thr Arg Lys Lys Lys Gln Glu Phe	
85 90 95	
Leu Tyr Ile Glu Glu Asn Thr Ile Asn Asn Val Pro Asp Glu Lys Ala	
100 105 110	
Asp Asp Ile Leu Tyr Pro Thr Asp Asp Glu Glu Arg Thr Ala Arg Leu	
115 120 125	
Ile Gln Ala Ile Asp Leu Leu Asn Val Glu Glu Lys Ala Leu Ile Thr	
130 135 140	
Leu Phe Tyr Tyr Glu Glu Lys Ser Ile Glu Glu Ile Gly Glu Val Leu	
145 150 155 160	
Lys Leu Ser Pro Gly Asn Val Lys Val Lys Leu His Arg Thr Arg Lys	
165 170 175	
Lys Ile Tyr Val Leu Met Asn Gly Lys Glu	
180 185	

<210> 7427
 <211> 146
 <212> PRT
 <213> B.fragilis

<400> 7427

Lys His Thr Ile Met Met Asp Phe Ile Thr Ala Pro Leu Ile Val Gly
 1 5 10 15
 Ile Ile Thr Leu Gly Ile Tyr Lys Leu Phe Glu Leu Phe Ala Cys Arg
 20 25 30
 Arg Glu Arg Ile Thr Leu Ile Glu Lys Leu Gly Glu Lys Met Ser Gln
 35 40 45
 Thr Asp Leu Glu Leu Asn Gly Lys Ile Cys Leu Pro Asp Phe Asn Arg
 50 55 60
 Pro Gln Leu Ser Phe Gly Ala Leu Lys Gly Gly Cys Leu Leu Leu Gly
 65 70 75 80
 Val Gly Leu Gly Leu Leu Val Gly Phe Ile Leu Ser Tyr Val Ser Phe
 85 90 95
 Ser Pro Tyr Asp Leu Asp Arg Leu Asp Arg Gly Tyr Thr Arg Glu Met
 100 105 110
 Val Gly Val Ile Tyr Gly Ser Cys Thr Leu Leu Phe Gly Gly Ala Gly
 115 120 125
 Leu Val Ala Ser Phe Leu Ile Glu Gln Asn Phe Ala Ala Lys Lys Lys
 130 135 140
 Glu Lys
 145

<210> 7428
 <211> 601
 <212> PRT
 <213> B.fragilis

<400> 7428

Ile Tyr Asn Phe Leu Ser Gln Leu Pro Val Ile Ala Thr Ser Asn His
 1 5 10 15
 Leu Asn Leu Thr Ile Asn Met Ala Lys Lys Val Ala Glu Gln Leu Val
 20 25 30
 Asp Thr Leu Ile Glu Ala Gly Val Arg Arg Ile Tyr Ala Val Thr Gly
 35 40 45
 Asp Ser Leu Asn Glu Val Asn Glu Ala Val Arg Gln Asn Glu Val Met
 50 55 60
 Lys Trp Ile His Val Arg His Glu Glu Thr Gly Ala Tyr Ala Ala Gly
 65 70 75 80
 Ala Glu Ala Gln Leu Thr Gly Leu Pro Gly Cys Cys Ala Gly Ser Ser
 85 90 95
 Gly Pro Gly His Val His Leu Ile Asn Gly Leu Tyr Asp Ala His Arg
 100 105 110
 Ser Gly Ala Pro Val Ile Ala Ile Ala Ser Thr Ile Pro Thr Gly Glu
 115 120 125
 Phe Gly Thr Glu Tyr Phe Gln Glu Thr Asn Thr Val Lys Leu Phe Asn
 130 135 140
 Asp Cys Ser Phe Tyr Asn Glu Val Ala Thr Thr Pro Glu Gln Phe Pro
 145 150 155 160
 Arg Met Leu Gln Ser Ala Leu Gln Thr Ala Thr Thr Arg Lys Gly Val
 165 170 175
 Ala Val Val Gly Leu Pro Gly Asp Leu Ala Lys Lys Pro Ala Val Lys
 180 185 190
 Val Glu Ser Ser Glu Gln Ile Tyr Pro Leu Ala Ser Ser Val Cys Pro
 195 200 205

Ala Glu Glu Asp Leu Ile Arg Leu Ala Gly Met Leu Asn His Tyr Glu
 210 215 220
 Arg Ile Thr Leu Phe Cys Gly Ile Gly Cys Lys Gly Ala His Glu Glu
 225 230 235 240
 Ile Ile Arg Met Ser Glu Thr Leu Asn Ala Pro Val Ala Tyr Thr Phe
 245 250 255
 Lys Gly Lys Met Glu Val Gln Tyr Asp Asn Pro Tyr Glu Val Gly Met
 260 265 270
 Thr Gly Leu Leu Gly Met Pro Ser Gly Tyr Tyr Ser Met His Glu Ala
 275 280 285
 Glu Val Leu Val Met Leu Gly Thr Asp Phe Pro Tyr Ser Ala Phe Leu
 290 295 300
 Pro Asp Asp Ile Lys Ile Val Gln Val Asp Ile Lys Pro Glu Arg Leu
 305 310 315 320
 Gly Arg Arg Ala Lys Val Asp Leu Gly Leu Cys Gly Asp Val Arg Ser
 325 330 335
 Thr Leu Arg Ala Leu Leu Pro Met Leu Gln Gln Lys Lys Asn Asp Ser
 340 345 350
 Phe Leu Arg Lys Gln Leu Lys Arg Tyr Glu Gly Val Lys Lys Asp Leu
 355 360 365
 Ala Ala Tyr Thr Glu Asp Lys Gly Lys Met Asp Gln Ile His Pro Glu
 370 375 380
 Tyr Val Met Ser Glu Ile Asn Asn Ile Ser Ser Asp Asp Ala Ile Tyr
 385 390 395 400
 Thr Val Asp Thr Gly Met Thr Cys Val Trp Gly Ala Arg Tyr Leu Gln
 405 410 415
 Ala Thr Gly Lys Arg His Met Leu Gly Ser Phe Asn His Gly Ser Met
 420 425 430
 Ala Asn Ala Leu Pro Gln Ala Ile Gly Ala Ala Leu Ala Cys Pro Asp
 435 440 445
 Arg Gln Val Ile Ala Leu Cys Gly Asp Gly Gly Leu Ser Met Thr Leu
 450 455 460
 Gly Asp Leu Glu Thr Val Val Gln Tyr Lys Leu Pro Ile Lys Ile Ile
 465 470 475 480
 Val Phe Asn Asn Arg Ser Leu Gly Met Val Lys Leu Glu Met Glu Val
 485 490 495
 Asp Gly Leu Pro Asp Trp Gln Thr Asp Met Leu Asn Pro Asn Phe Ala
 500 505 510
 Gln Val Ala Glu Ala Met Gly Met Thr Gly Phe Asn Val Ser Asp Pro
 515 520 525
 Glu Glu Val Leu Asn Thr Leu Cys Asn Ala Phe Glu Leu Glu Gly Pro
 530 535 540
 Val Leu Ile Asn Val Met Thr Asp Pro Asn Ala Leu Ala Met Pro Pro
 545 550 555 560
 Lys Ile Glu Leu Gly Gln Met Val Gly Phe Ala Gln Ser Met Tyr Lys
 565 570 575
 Leu Leu Ile Asn Gly Arg Ser Gln Glu Val Ile Asp Thr Ile Asn Ser
 580 585 590
 Asn Phe Lys His Ile Arg Glu Val Phe
 595 600

<210> 7429

<211> 89

<212> PRT

<213> B.fragilis

<400> 7429

Leu Cys Asp Leu Lys Asp Gly Val Ser Tyr Pro Gly Leu Ala Ser Asp
 1 5 10 15

Gly Ser Tyr Ile Tyr Ile Phe Glu Asn Arg Asn Leu Gln Val Tyr His
 20 25 30
 Ile Glu Thr Asp Thr Met Arg Ile Tyr Glu Leu Ala Ala Leu Asp Val
 35 40 45
 Glu Asn Ala Gly Leu Phe Tyr Trp Arg Asn Thr Leu Tyr Ile Val Gly
 50 55 60
 Gly Cys Asn Cys Gln Gly Ile Tyr Val Ala Pro His Arg Asp Val Ile
 65 70 75 80
 Ala Ile Asp Val Ser Gln Ile Asn Pro
 85

<210> 7430
 <211> 90
 <212> PRT
 <213> B.fragilis

<400> 7430
 Thr Gln Ala Val Asp Phe Thr Ser Phe Ile Tyr Asp Asp Cys Leu Tyr
 1 5 10 15
 Ala Met Gly Gly Ala Ile Arg Glu Lys Ala Tyr Ser Asn Lys Lys His
 20 25 30
 Thr Leu Asp Leu Lys Arg Gly Val Trp Tyr Glu Leu Glu Gly Thr Leu
 35 40 45
 Pro Ala Gly Arg Cys Gly Arg Met Asn Gly Ile Leu Val Gly Asp Lys
 50 55 60
 Val Tyr Phe Trp Gly Gly Tyr His Thr Ala Pro Met Trp Thr Ala Ala
 65 70 75 80
 Ser Tyr Asp Leu Arg Thr Gly Glu Trp Arg
 85 90

<210> 7431
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 7431
 Ser Ser Thr Ser Gly Val Thr Cys Cys Glu Ala Ser Leu His Ala Gln
 1 5 10 15
 Ser Gly Leu Gln Trp Leu Ser Thr Ile Asn Pro Ser Lys Phe Arg Ser
 20 25 30
 Ile Ala Cys Trp Gln Arg Gly Ala Thr Ser Ser Arg Phe Pro Pro Met
 35 40 45
 Trp Leu Gly Ser Gln Lys Ile Gly Ser Ser Gly Met Arg Arg Arg Asn
 50 55 60
 Ser Ile Gly Met Cys His
 65 70

<210> 7432
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 7432
 Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45

Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
 290 295 300
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
 305 310 315 320
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
 325 330 335
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
 340 345 350
 Met Ala Glu Asn Thr Val Phe Leu Leu Thr Ala Leu Ile His Asn
 355 360 365
 Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
 370 375 380
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
 385 390 395 400
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
 405 410 415
 Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
 420 425 430

<210> 7433

<211> 262

<212> PRT

<213> B.fragilis

<400> 7433

Gln Ile Ile His Ile Met Arg Ile Leu Ile Leu Gly Ala Gly Lys Met
 1 5 10 15
 Gly Ser Phe Phe Thr Asp Ile Leu Ser Phe Gln His Glu Thr Ala Val
 20 25 30

Phe Asp Val Asn Pro His Gln Leu Arg Phe Val Tyr Asn Thr Tyr Arg
 35 40 45
 Phe Thr Thr Leu Glu Glu Ile Lys Glu Phe Glu Pro Glu Leu Val Ile
 50 55 60
 Asn Ala Ala Thr Val Lys Tyr Thr Leu Asp Ala Phe Arg Lys Ile Leu
 65 70 75 80
 Pro Val Leu Pro Lys Asp Cys Ile Leu Ser Asp Ile Ala Ser Val Lys
 85 90 95
 Thr Gly Leu Lys Lys Phe Tyr Glu Glu Ser Gly Phe Arg Tyr Val Ser
 100 105 110
 Thr His Pro Met Phe Gly Pro Thr Phe Ala Ser Leu Ser Asn Leu Ser
 115 120 125
 Ser Glu Ser Ala Ile Ile Ile Ser Glu Ser Asp His Leu Gly Lys Val
 130 135 140
 Phe Phe Lys Asp Leu Tyr Asn Ser Leu Asn Leu Asn Ile Phe Glu Tyr
 145 150 155 160
 Thr Phe Asp Glu His Asp Glu Thr Val Ala Tyr Ser Leu Ser Ile Pro
 165 170 175
 Phe Val Ser Thr Phe Val Phe Ala Ala Val Met Lys His Gln Glu Ala
 180 185 190
 Pro Gly Thr Thr Phe Lys Lys His Met Ala Ile Ala Lys Gly Leu Leu
 195 200 205
 Ser Glu Asp Asp Tyr Leu Leu Gln Glu Ile Leu Phe Asn Pro Arg Thr
 210 215 220
 Pro Ser Gln Val Glu Asn Ile Arg Thr Glu Leu Lys Gln Leu Leu Glu
 225 230 235 240
 Ile Ile Thr Asn Lys Asp Ala Glu Gly Met Lys Lys Tyr Leu Thr Lys
 245 250 255
 Ile Arg Glu Lys Ile Lys
 260

<210> 7434
 <211> 396
 <212> PRT
 <213> B.fragilis

<400> 7434

Ala Asn Met Gln Lys Glu Asn Gln Thr Tyr Lys Val Ala Pro Ala Asp
 1 5 10 15
 Arg Leu Ala Gly Val Ser Glu Tyr Tyr Phe Ser Lys Lys Leu Lys Glu
 20 25 30
 Val Ala Arg Met Asn Ala Glu Gly Lys Asp Val Ile Ser Leu Gly Ile
 35 40 45
 Gly Ser Pro Asp Met Pro Pro Ser Glu Gln Thr Ile Glu Thr Leu Cys
 50 55 60
 Asn Asn Ala His Asp Pro Asn Gly His Gly Tyr Gln Pro Tyr Val Gly
 65 70 75 80
 Ile Pro Glu Leu Arg Lys Gly Phe Ala Asp Trp Tyr Lys Arg Trp Tyr
 85 90 95
 Gly Val Glu Leu Asn Pro Ala Thr Glu Ile Gln Pro Leu Ile Gly Ser
 100 105 110
 Lys Glu Gly Ile Leu His Val Thr Leu Ala Phe Val Asn Pro Gly Glu
 115 120 125
 Gln Val Leu Val Pro Asn Pro Gly Tyr Pro Thr Tyr Thr Ser Leu Ser
 130 135 140
 Lys Ile Leu Gly Ala Glu Val Val Asn Tyr Asn Leu Lys Glu Glu Asp
 145 150 155 160
 Gly Trp Met Pro Asp Phe Asp Glu Leu Glu Lys Met Asp Leu Ser Arg
 165 170 175

Val Lys Leu Met Trp Thr Asn Tyr Pro Asn Met Pro Thr Gly Ala Asn
 180 185 190
 Ala Thr Pro Glu Leu Tyr Lys Arg Leu Val Glu Phe Ala Arg Arg Lys
 195 200 205
 Asn Ile Val Ile Val Asn Asp Asn Pro Tyr Ser Phe Ile Leu Asn Asp
 210 215 220
 Lys Pro Ile Ser Ile Leu Ser Val Pro Gly Ala Lys Glu Cys Cys Ile
 225 230 235 240
 Glu Phe Asn Ser Met Ser Lys Ser His Asn Met Pro Gly Trp Arg Ile
 245 250 255
 Gly Met Leu Ala Ser Asn Ala Glu Phe Val Gln Trp Ile Leu Lys Val
 260 265 270
 Lys Ser Asn Ile Asp Ser Gly Met Phe Arg Ala Met Gln Leu Ala Ala
 275 280 285
 Ala Lys Ala Leu Glu Ala Asp Ser Thr Trp Tyr Glu Gly Asn Asn Val
 290 295 300
 Asn Tyr Arg Asn Arg Arg His Leu Ala Gly Glu Ile Met Lys Thr Leu
 305 310 315 320
 Gly Cys Thr Tyr Asp Glu Lys Gln Val Gly Met Phe Leu Trp Gly Lys
 325 330 335
 Ile Pro Ala Ser Cys Ala Asp Val Glu Glu Leu Thr Glu Lys Val Leu
 340 345 350
 Gln Glu Ala Arg Val Phe Ile Thr Pro Gly Phe Ile Phe Gly Ser Asn
 355 360 365
 Gly Ala Arg Tyr Ile Arg Ile Ser Leu Cys Cys Lys Asp Ala Lys Leu
 370 375 380
 Ala Glu Ala Leu Glu Arg Ile Lys Leu Ile Met Lys
 385 390 395

<210> 7435
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 7435
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 7436
 <211> 306
 <212> PRT
 <213> B.fragilis

<400> 7436
 Leu Asn Asn Lys Met Lys His Tyr Gln Arg Leu Glu Gly Met Val Ala
 1 5 10 15
 Ala Thr Phe Thr Pro Met Asp Ala Arg Gly Asp Ile Asn Leu Ser Val
 20 25 30
 Ile Asp Lys Tyr Ala Asp Leu Met Ala Glu Ser Gly Met Ala Gly Val

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      35              40              45
Phe Val Cys Gly Thr Thr Gly Glu Ser His Ser Leu Thr Thr Gly Glu
  50              55              60
Arg Lys Ala Ile Leu Ala Gln Trp Ile Lys Ser Ala Arg Lys Arg Phe
  65              70              75              80
Lys Val Ile Ala His Val Gly Ser Asn Cys Gln Leu Glu Ala Met Glu
      85              90              95
Leu Ala Arg His Ala Gln Glu Val Glu Ala Asp Ala Phe Ala Ala Met
      100              105              110
Ala Pro Cys Phe Phe Lys Pro Ser Ser Val Lys Asp Leu Val Asp Phe
      115              120              125
Phe Thr Pro Ile Ala Gln Ser Ala Pro Asp Leu Pro Phe Tyr Tyr Tyr
      130              135              140
Asn Met Pro Ser Met Thr Gly Val Ser Leu Ser Val Pro Ser Phe Leu
      145              150              155              160
Ile Glu Gly Lys Lys Thr Met Pro Asn Leu Val Gly Thr Lys Phe Thr
      165              170              175
His Asn Asn Leu Met Glu Met Gly Glu Cys Leu Glu Leu Asn Asn Gly
      180              185              190
Glu Phe Glu Val Leu His Gly Tyr Asp Glu Ile Leu Ile Ala Gly Leu
      195              200              205
Ala Leu Gly Ala Val Ala Gly Val Gly Ser Thr Tyr Asn Tyr Leu Pro
      210              215              220
Ala Val Tyr Gln Asn Leu Phe Asp Ala Phe Lys Lys Gly Asp Ile Cys
      225              230              235              240
Thr Ala Arg Arg Met Gln Gln Lys Ser Ile Glu Ile Val Lys Ile Ile
      245              250              255
Ile Lys Tyr Gly Gly Gly Val Arg Gly Gly Lys Ala Ile Met Asn Leu
      260              265              270
Ile Gly Val Asp Cys Gly Arg Cys Arg Leu Pro Val Thr Pro Phe Gly
      275              280              285
Asp Asp Glu Tyr Ser Ser Leu Lys Arg Asp Leu Glu Lys Ile Gly Phe
      290              295              300
Leu Asn
305

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<210> 7437

<211> 165

<212> PRT

<213> B.fragilis

<400> 7437

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Ile Lys Leu Asn Tyr Ser Val Ala Glu Leu Lys Glu Ser Tyr Lys Phe
  1              5              10              15
Met Lys Lys Leu Gly Leu Leu Leu Phe Leu Phe Val Cys Ala Ala Val
      20              25              30
Val Arg Ala Gln Ser Asn Ile Val Lys Ser Leu Glu Arg Asn Val Pro
      35              40              45
Gly Gln Gly Lys Val Thr Ile His Gln Asp Ser Arg Ile Glu Ala Leu
      50              55              60
Leu Gly Thr Ala Arg Thr Gly Thr Gly Glu Gln Thr Val Ile Lys Ser
      65              70              75              80
Ser Gly Tyr Arg Val Gln Ala Tyr Ala Gly Asn Asn Thr Arg Gln Ala
      85              90              95
Lys Asn Glu Ala His Gln Val Gly Thr Arg Val Lys Glu Tyr Phe Pro
      100              105              110
Glu Leu Ser Val Tyr Thr Ser Phe Asn Pro Pro Arg Trp Leu Cys Arg
      115              120              125
Val Gly Asp Phe Arg Ser Ile Glu Glu Ala Asp Ala Met Met Arg Lys

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130 135 140
 Leu Lys Ala Thr Gly Val Phe Lys Glu Val Ser Ile Val Lys Asp Gln
 145 150 155 160
 Ile Asn Ile Pro Leu
 165

<210> 7438
 <211> 1102
 <212> PRT
 <213> B.fragilis

<400> 7438
 Lys His Thr Lys Met Arg Lys Ile Thr Arg Ile Lys Cys Leu Ile Val
 1 5 10 15
 Val Leu Leu Thr Phe Ile Gly Thr Leu Ala Pro Val His Ala Gln Gln
 20 25 30
 Ser Gly Asn Phe Glu Ile Ser Gly Val Val Lys Asp Thr Ser Gly Glu
 35 40 45
 Pro Val Ile Gly Ala Thr Val Ile Val Lys Asn Thr Gln Ile Gly Thr
 50 55 60
 Thr Thr Asp Val Asp Gly Lys Phe Lys Leu Lys Val Pro His Lys Ser
 65 70 75 80
 Leu Leu Gln Ile Ser Phe Ile Gly Met Lys Thr Lys Asp Leu Lys Val
 85 90 95
 Thr Asn Asn Thr Phe Tyr Glu Ile Thr Leu Glu Asp Glu Ser Val Leu
 100 105 110
 Leu Asp Glu Val Val Ala Ile Gly Tyr Gly Thr Gln Ser Lys Ala Thr
 115 120 125
 Val Thr Ser Gly Val Val Ser Val Lys Lys Ala Glu Leu Met Ser Ser
 130 135 140
 Val Ser Ala Ser Pro Leu Asn Asn Leu Gln Gly Lys Val Ala Gly Leu
 145 150 155 160
 Asp Ile Arg Gln Thr Thr Gly Gln Pro Gly Ala Gln Pro Val Val Leu
 165 170 175
 Ile Arg Gly Gly Ser Thr Asp Pro Ala Asn Asp Ser Pro Leu Phe Val
 180 185 190
 Ile Asp Gly Val Val Arg Ser Asn Met Asn Gly Leu Asn Gln Glu Asp
 195 200 205
 Ile Glu Ser Met Glu Val Leu Lys Asp Ala Ala Ser Ala Ala Ile Tyr
 210 215 220
 Gly Ala Lys Ala Ala Asn Gly Ile Ile Leu Ile Thr Thr Lys Gln Gly
 225 230 235 240
 Ser Ser Lys Asp Gly Lys Ala Thr Ile Ser Ala Ser Tyr Arg Leu Gly
 245 250 255
 Val Glu Gln Ile Arg Gln His Tyr Pro Phe Ser Gly Ala Arg Asp Tyr
 260 265 270
 Leu Tyr Ala Ser Arg Leu Ala Gly Ser Arg Gly Ile Asn Asp Ala Asn
 275 280 285
 Val Ser Gly Arg Leu Glu Gly Gly Ala Tyr Pro Tyr Ser Thr Gly Asn
 290 295 300
 Ile Asn Tyr Lys Asn Gly Ala Leu Glu Gly Tyr Gly Tyr Ser Arg Phe
 305 310 315 320
 Thr Thr Glu Tyr Leu Asp Asp Leu Ile Ser Asn Met Gly Gln Ser Tyr
 325 330 335
 Val Asp Asp Leu Leu Asn Arg Gln Gly Tyr Glu Thr Met Thr Asp Pro
 340 345 350
 Tyr Ser Gly Lys Gln Leu Ile Phe Lys Asp Asn His Tyr Gln Lys Asp
 355 360 365
 Val Leu Phe Gln Thr Ala Leu Thr His Asn Tyr Asp Leu Ser Ala Ser

370		375		380
Gly Gly Asn Asp Lys	Gly Asn Tyr Tyr Val	Ser Leu Gly Tyr Ile Asn		
385	390	395	400	
Ser Glu Gly Ile Val	Leu Gly Thr Gly Tyr Asp Arg Phe Ser Leu Thr			
405	410	415		
Ala Asn Gly Asn Tyr Asn Leu Arg Ser Asn Leu Lys Leu Thr Val Gly				
420	425	430		
Leu Lys His Ser Thr Ile Ser Asn Lys Ala Thr Asp Pro Glu Asn Ser				
435	440	445		
Gly Thr Ser Thr Met Asp Arg Ser Ser Arg Tyr Pro Thr Thr Phe Arg				
450	455	460		
Leu Tyr Tyr Asp Asp Gly Thr Pro Gly Ile Gly Glu Ala Gly Gly Ser				
465	470	475	480	
Pro Arg Asn Arg Leu His Glu Leu Tyr Tyr Gln Asp Ile Ser Asp Lys				
485	490	495		
Val Tyr Arg Asn Thr Ile Gln Leu Gly Leu Asp Trp Glu Ile Leu Lys				
500	505	510		
Gly Leu His Phe Lys Pro Ser Ala Ser Tyr Tyr Met Gln Glu Asn Ile				
515	520	525		
Tyr Arg Phe Phe Glu Lys Tyr Asn Glu Phe Asn Lys Gly Arg Lys Thr				
530	535	540		
Leu Glu Lys His Asp Gln Tyr Lys Gln Ile Met Ala Asp Ala Val Phe				
545	550	555	560	
Thr Tyr Asp Lys Val Phe Ser Asp Lys His Thr Leu Asn Ala Met Ile				
565	570	575		
Gly Met Asn Tyr Thr Gln Asp Asp Thr Tyr Lys Leu Lys Gly Thr Gly				
580	585	590		
Ser Glu Ala Pro Thr Asp Tyr Val Pro Thr Leu Ala Pro Thr Lys Pro				
595	600	605		
Asp Leu Gln Arg Thr Thr Ser Ser Leu Asp Lys Glu Val Leu Val Gly				
610	615	620		
Phe Phe Ala Arg Val Asn Tyr Asp Tyr Lys Arg Arg Tyr Leu Leu Thr				
625	630	635	640	
Val Ser Ala Arg Tyr Asp Gly Ala Ser Gln Phe Ala Glu Asp His Lys				
645	650	655		
Phe Ala Leu Phe Pro Ala Val Ser Gly Gly Trp Asn Met His Tyr Glu				
660	665	670		
Asp Trp Phe Pro Lys Thr Val Val Ser Arg Met Lys Leu Arg Ala Ser				
675	680	685		
Trp Gly Gln Thr Gly Asn Asn Lys Leu Ser Tyr Ser Asn Thr Gln Gly				
690	695	700		
Glu Tyr Ala Ser Tyr Ile Tyr Ala Gly Asn Pro Gly Val Leu Asn Ser				
705	710	715	720	
Val Leu Ala Asn Asn Ser Leu Val Trp Glu Thr Thr Ser Asn Val Asp				
725	730	735		
Tyr Gly Phe Asp Ala Gly Phe Phe Asp Asn Arg Leu Glu Leu Ser Val				
740	745	750		
Thr Gly Tyr Asn Lys Leu Thr Ser Asp Arg Leu Tyr Asp Lys Ala Leu				
755	760	765		
Pro Ala Gln Thr Gly Phe Ser Ser Ile Lys Ala Asn Leu Gly Thr Val				
770	775	780		
Gln Asn Glu Gly Phe Glu Leu Ser Leu Thr Ala His Pro Leu Ser Thr				
785	790	795	800	
Thr Ser Pro Val Ser Trp Asp Val Thr Gly Thr Phe Ser Met Asn Arg				
805	810	815		
Thr Tyr Met Lys Lys Leu Pro Tyr Asn Gly Arg Asp Lys Asn Arg Val				
820	825	830		
Gln Gly Gly Leu Val Trp Asp Ala Lys Ser Gly Thr Tyr Val Glu Thr				
835	840	845		

Gly Gly Leu Ala Glu Gly Glu Arg Ile Gly Gly Arg Trp Gly Tyr Lys
 850 855 860
 Tyr Leu Gly Val Tyr Asp Thr Asp Glu Glu Ala Ala Lys Ala Pro Val
 865 870 875 880
 Asp Thr Lys Val Ser Gly Ser Lys Met Asn Lys Lys Lys Val Ala Gly
 885 890 895
 Asp Ala Ile Trp Ala Asp Leu Asp Asn Asn Gly Val Ile Asp Asp Lys
 900 905 910
 Asp Ile Thr Phe Ile Gly Trp Ala Asn Pro Asp Lys Lys Gly Ala Leu
 915 920 925
 Ile Asn Asn Leu Ser Tyr Lys Asn Phe Ser Leu Arg Leu Val Val Asp
 930 935 940
 Phe Ala Leu Gly His Ser Ile Ala Asn Ile Trp Arg Cys Arg Ala Asn
 945 950 955 960
 Ala Tyr Ala Arg Asn Ala Ile Ile Pro Thr Thr Asp Val Thr Asn Ala
 965 970 975
 Asn Ile Trp Trp Gln Thr Gly Asp Ala Ala Thr Ala Lys Tyr Pro Arg
 980 985 990
 Tyr Asp Val Ala Ser Asp Trp Asp Asn Gly Tyr Arg Asn His Met Arg
 995 1000 1005
 Thr Ile Ala Tyr Ala Gly Met Asn Ser Asn Gly Asn Ala Asp Asn Thr
 1010 1015 1020
 Ala Tyr Tyr Ser Lys Gly Asp Tyr Leu Cys Phe Arg Glu Val Ser Leu
 1025 1030 1035 1040
 Gly Tyr Glu Leu Pro Arg Ser Ile Cys Ser Lys Met Lys Val Lys Gly
 1045 1050 1055
 Val Ser Leu Asn Ala Gly Val Thr Asn Ile Gly Tyr Ile Thr Ala Phe
 1060 1065 1070
 Asp Gly Leu Asn Pro Glu Gln Tyr Asp Gly Gln Glu Thr Gly Glu Tyr
 1075 1080 1085
 Phe Leu Pro Ile Gln Phe Asn Phe Gly Val Arg Leu Thr Phe
 1090 1095 1100

<210> 7439

<211> 683

<212> PRT

<213> B.fragilis

<400> 7439

Leu Ser Lys Lys Tyr His Val His Leu His Pro Gln Gly Asp Lys Thr
 1 5 10 15
 Met Ile Asp Gln Ala Thr Ile Asp Arg Ile Leu Asp Ala Ala Gln Ile
 20 25 30
 Val Glu Val Val Ser Asp Phe Val Thr Leu Arg Lys Arg Gly Val Asn
 35 40 45
 Tyr Val Gly Leu Cys Pro Phe His Asn Glu Lys Thr Pro Ser Phe Ser
 50 55 60
 Val Ser Pro Ser Lys Gly Leu Cys Lys Cys Phe Ser Cys Gly Lys Gly
 65 70 75 80
 Gly Asn Ala Val His Phe Ile Met Glu His Glu Gln Met Ser Tyr Pro
 85 90 95
 Glu Ala Leu Arg Tyr Leu Ala Lys Lys Tyr Asn Ile Glu Ile Lys Glu
 100 105 110
 Arg Glu Leu Thr Asn Glu Glu Lys Glu Val Gln Ser Asn Arg Glu Ser
 115 120 125
 Met Phe Ile Val Asn Asn Phe Ala Arg Asp Tyr Phe Gln Asn Ile Leu
 130 135 140
 Lys Asn His Val Asp Gly Arg Ser Ile Gly Leu Ala Tyr Phe Arg Gln
 145 150 155 160

Arg	Gly	Phe	Arg	Asp	Asp	Ile	Ile	Asp	Lys	Phe	Gln	Leu	Gly	Phe	Ser
				165					170					175	
Thr	Glu	Gly	Arg	Asp	Ala	Leu	Ala	Gln	Glu	Ala	Leu	Arg	Lys	Gly	Phe
			180					185					190		
Lys	Gln	Glu	Phe	Leu	Val	Lys	Thr	Gly	Leu	Cys	Tyr	Glu	Thr	Asp	Asp
		195					200					205			
His	Lys	Leu	Arg	Asp	Arg	Phe	Trp	Gly	Arg	Val	Met	Phe	Pro	Val	His
	210					215					220				
Thr	Leu	Ser	Gly	Lys	Val	Val	Ala	Phe	Gly	Gly	Arg	Val	Leu	Ser	Thr
225				230						235					240
Glu	Asn	Lys	Lys	Leu	Ala	Lys	Tyr	Val	Asn	Ser	Pro	Glu	Ser	Glu	Ile
			245						250					255	
Tyr	His	Lys	Ser	Asn	Glu	Leu	Tyr	Gly	Ile	Tyr	Phe	Ala	Lys	Gln	Ala
			260					265					270		
Ile	Val	Lys	Gln	Asp	Arg	Cys	Phe	Leu	Val	Glu	Gly	Tyr	Thr	Asp	Val
		275					280					285			
Ile	Ser	Met	His	Gln	Ser	Gly	Val	Glu	Asn	Val	Val	Ala	Ser	Ser	Gly
	290					295					300				
Thr	Ser	Leu	Thr	Pro	Gly	Gln	Ile	Arg	Leu	Ile	His	Arg	Phe	Thr	Asn
305					310					315					320
Asn	Ile	Thr	Val	Leu	Tyr	Asp	Gly	Asp	Met	Ala	Gly	Ile	Lys	Ala	Ser
			325						330					335	
Ile	Arg	Gly	Ile	Asp	Met	Leu	Leu	Glu	Gly	Met	Asn	Ile	Lys	Val	
			340					345				350			
Cys	Leu	Leu	Pro	Asp	Gly	Asp	Asp	Pro	Asp	Ser	Phe	Ala	Arg	Lys	His
		355				360						365			
Asn	Ala	Thr	Glu	Phe	Gln	Asn	Phe	Ile	Gln	Glu	His	Glu	Thr	Asp	Phe
	370					375					380				
Ile	Arg	Phe	Lys	Ala	Gln	Leu	Leu	Met	Glu	Asp	Ala	Gly	Lys	Asp	Pro
385					390					395					400
Met	Lys	Arg	Ala	Glu	Leu	Ile	Asn	Asp	Ile	Val	Arg	Ser	Ile	Ala	Val
			405						410					415	
Ile	Pro	Glu	Ala	Ile	Val	Arg	Asp	Val	Tyr	Ile	Lys	Glu	Cys	Gly	Gln
		420						425					430		
Leu	Leu	Arg	Ile	Glu	Asp	Lys	Leu	Leu	Val	Ser	Glu	Val	Ala	Lys	Arg
		435					440					445			
Arg	Glu	Leu	Gln	Ala	Glu	Lys	Gly	Asn	Lys	Pro	Ile	Ala	Ser	Asn	Asn
	450					455					460				
Ala	Pro	Thr	Pro	Gln	Pro	Gly	Glu	Met	Pro	Pro	Phe	Pro	Pro	Pro	Glu
465					470					475					480
Glu	Met	Glu	Ala	Asp	Thr	Tyr	Gln	Ser	Phe	Ile	Pro	Gln	Glu	Gly	Lys
			485						490					495	
Glu	Gly	Gln	Glu	Phe	Tyr	Lys	Tyr	Glu	Arg	Leu	Ile	Ile	Gln	Met	Ile
			500					505					510		
Val	Arg	Tyr	Gly	Glu	Lys	Val	Met	Cys	Asn	Leu	Thr	Asp	Glu	Glu	Gly
		515					520					525			
Asn	Glu	Val	Pro	Val	Thr	Val	Val	Glu	Tyr	Val	Ile	Asn	Asp	Leu	Lys
	530					535					540				
Glu	Asp	Glu	Leu	Ala	Phe	His	Asn	Pro	Leu	His	Arg	Gly	Ile	Leu	Ser
545					550					555					560
Glu	Ala	Ser	Glu	His	Ile	His	Asp	Gln	Glu	Phe	Ala	Ser	Glu	Arg	Phe
			565						570					575	
Phe	Val	Ala	His	Pro	Asp	Pro	Lys	Ile	Ser	Thr	Ile	Ala	Thr	Glu	Leu
			580					585					590		
Ala	Ser	Asp	Arg	Tyr	Gln	Leu	Ser	Lys	Tyr	His	Ser	Lys	Thr	Gln	Lys
		595					600					605			
Leu	Val	Thr	Asp	Glu	Glu	Arg	Leu	Tyr	Glu	Met	Val	Pro	Met	Leu	Met
	610					615					620				
Ile	Asn	Phe	Lys	Asn	Ala	Ile	Val	Ala	Glu	Glu	Leu	Lys	His	Ile	Met

625		630		635		640									
Tyr	Ala	Leu	Gln	Asp	Pro	Ser	Ile	Ala	Asn	Asp	Asn	Ala	Gln	Cys	Asp
				645					650					655	
Ala	Val	Met	Gln	Arg	Tyr	Lys	Glu	Met	Lys	Glu	Ile	Gln	Asn	Leu	Met
			660					665					670		
Ala	Lys	Arg	Leu	Gly	Asp	Arg	Val	Val	Leu	Arg					
		675					680								

<210> 7440

<211> 534

<212> PRT

<213> B.fragilis

<400> 7440

Asn	Ile	Thr	Asp	Met	Lys	Phe	Val	Thr	Leu	Ser	Leu	Leu	Ala	Thr	Ala
1				5					10					15	
Leu	Thr	Val	Gly	Gly	Asn	Ala	Ala	Glu	Gln	Ala	Arg	Ser	Ser	Lys	Gln
			20					25					30		
Pro	Asn	Ile	Leu	Phe	Ile	Leu	Ala	Asp	Asp	Phe	Gly	Trp	Arg	Asp	Leu
		35				40						45			
Ala	Cys	Thr	Gly	Ser	Arg	Tyr	Glu	Ser	Pro	Asn	Ile	Asp	Gly	Ile	
	50					55				60					
Ala	Arg	Asn	Gly	Val	Arg	Phe	Thr	Gln	Gly	Tyr	Ala	Ala	Cys	Gln	Val
65					70					75				80	
Ser	Ser	Pro	Ser	Arg	Ala	Ser	Ile	Met	Thr	Gly	Lys	Phe	Thr	Ala	Arg
				85					90					95	
His	Gly	Ile	Thr	Asn	Trp	Ile	Gly	Glu	Gly	Ser	Gly	Glu	Glu	Trp	Arg
			100					105					110		
Lys	Met	Gly	Arg	His	Ser	Lys	Leu	Leu	Pro	Ala	Gln	Tyr	Val	Trp	Gln
		115					120					125			
Leu	Pro	Lys	Glu	Asp	Ile	Thr	Leu	Pro	Glu	Ala	Leu	Lys	Ala	His	Gly
	130						135				140				
Tyr	Lys	Thr	Phe	Met	Ala	Gly	Lys	Trp	His	Leu	Gly	Gly	Glu	Gly	Ser
145					150					155					160
Tyr	Pro	Glu	Asp	His	Gly	Phe	Asp	Ile	Asn	Ile	Gly	Gly	His	Glu	Ala
				165					170					175	
Gly	Gly	Pro	Tyr	Pro	Gly	Gly	Tyr	Phe	Ala	Pro	Tyr	Gly	Asn	Pro	Lys
		180					185						190		
Met	Lys	Glu	Gly	Pro	Asp	Gly	Glu	Asn	Leu	Ser	Met	Arg	Leu	Ala	His
		195					200					205			
Glu	Thr	Ala	Ser	Phe	Ile	Glu	Thr	His	Thr	Arg	Arg	Asn	Lys	Lys	Gln
	210					215					220				
Pro	Phe	Phe	Ala	Phe	Leu	Ser	Phe	Tyr	Ala	Val	His	Ala	Pro	Ile	Glu
225					230					235				240	
Thr	Thr	Glu	Ala	Lys	Trp	Arg	His	Phe	Arg	Asn	Lys	Ala	Asp	Ser	Met
				245					250					255	
Gly	Ile	Ala	Pro	Met	Gly	Phe	Glu	Val	Asp	Arg	Thr	Leu	Pro	Val	Arg
			260				265						270		
Leu	Gln	Gln	Asp	Asn	Pro	Ile	Tyr	Ala	Gly	Leu	Ile	Gln	Gln	Met	Asp
		275					280					285			
Asp	Ala	Val	Gly	Val	Val	Leu	Ala	Lys	Leu	His	Glu	Leu	Gly	Leu	Asp
	290					295					300				
Glu	Asn	Thr	Ile	Ile	Val	Phe	Thr	Ser	Asp	Asn	Gly	Gly	Val	Ser	Ser
305					310					315				320	
Gly	Asp	Ala	Tyr	Ala	Thr	Ser	Asn	Tyr	Pro	Leu	Arg	Gly	Gly	Lys	Gly
			325						330					335	
Arg	Gln	Trp	Glu	Gly	Gly	Ile	Arg	Val	Pro	Leu	Phe	Ile	Asp	Phe	Pro
			340				345						350		
Gly	Asn	Thr	Leu	Lys	Gly	Asp	Ser	Cys	Val	Val	Pro	Val	Thr	Gly	Ala

355	360	365
Asp Leu Tyr Pro Thr Phe	Leu Asp Met Ala Gly	Ile Pro Leu Met Pro
370	375	380
Gly Gln His Gln Asp Gly	Val Ser Leu Leu Pro	Leu Leu Gln Gly Lys
385	390	395
Ser Ile Pro Glu Arg Ala	Leu Tyr Trp His Tyr	Pro His Tyr Gly Asn
405	410	415
Gln Gly Gly Glu Pro Ser	Ser Ile Ile Arg Gln Gly	Asp Trp Lys Leu
420	425	430
Ile His Tyr Tyr Glu Asp	Gly Arg Asp Glu Leu Tyr	Asn Leu Arg Ile
435	440	445
Asp Glu Thr Glu Ser Glu	Pro Leu Asn Val Gln Tyr	Pro Glu Lys Val
450	455	460
Glu Phe Leu Ser Lys Lys	Leu Ser Val Trp Leu Thr	Glu Val Gly Ala
465	470	475
Arg Tyr Pro Glu Pro Asp	Pro Gln Tyr Asn Pro Ala	Ala Glu Ala Leu
485	490	495
Tyr Lys Lys Lys Thr Arg	Glu Arg Met Met Arg Thr	Leu Glu Ala Thr
500	505	510
Arg Lys Lys Gln Leu Gly	Lys Asp Phe Lys Pro Asn	Ala Asp Trp Trp
515	520	525
Gly Ser Glu Thr Lys Asp		
530		

<210> 7441
 <211> 355
 <212> PRT
 <213> B.fragilis

<400> 7441

Ile Asp Met Glu Leu Glu Ser Ile Leu Leu Pro Gly Val Glu Asp Lys	
1	5 10 15
Arg Pro Met Val Ile Ala Gly Pro Cys Ser Ala Glu Thr Glu Glu Gln	
20	25 30
Val Met Ser Thr Ala Thr Gln Leu Ala Ala Lys Gly Val Lys Ile Phe	
35	40 45
Arg Ala Gly Ile Trp Lys Pro Arg Thr Lys Pro Gly Gly Phe Glu Gly	
50	55 60
Ile Gly Val Asp Gly Leu Ala Trp Leu Lys Glu Val Lys Lys Glu Thr	
65	70 75 80
Gly Met Tyr Val Ser Thr Glu Val Ala Thr Ala Lys His Val Tyr Glu	
85	90 95
Cys Leu Lys Ala Gly Ile Asp Val Leu Trp Val Gly Ala Arg Thr Thr	
100	105 110
Ala Asn Pro Phe Ala Val Gln Glu Ile Ala Asp Ala Leu Lys Gly Val	
115	120 125
Asp Ile Pro Val Leu Val Lys Asn Pro Val Asn Pro Asp Leu Glu Leu	
130	135 140
Trp Ile Gly Ala Leu Glu Arg Ile Asn Asn Ala Gly Leu Lys Arg Leu	
145	150 155 160
Gly Ala Ile His Arg Gly Phe Ser Ser Tyr Asp Lys Lys Leu Tyr Arg	
165	170 175
Asn Leu Pro Gln Trp His Ile Pro Ile Glu Leu Arg Arg Arg Ile Pro	
180	185 190
Glu Leu Pro Ile Phe Cys Asp Pro Ser His Ile Gly Gly Lys Arg Glu	
195	200 205
Leu Val Ala Pro Leu Cys Gln Gln Ala Met Asp Leu Asn Phe Asp Gly	
210	215 220
Leu Ile Val Glu Ser His Cys Asn Pro Asp Cys Ala Trp Ser Asp Ala	

225 230 235 240
 Ser Gln Gln Val Thr Pro Asp Val Leu Asp Tyr Ile Leu Asn Leu Leu
 245 250 255
 Val Ile Arg Lys Glu Thr Gln Thr Thr Glu Asn Leu Asn Val Leu Arg
 260 265 270
 Lys Gln Ile Asp Glu Cys Asp Asp Asn Ile Ile Gln Glu Leu Ala Lys
 275 280 285
 Arg Met Arg Val Ala Arg Glu Ile Gly Thr Tyr Lys Lys Glu His Asp
 290 295 300
 Ile Thr Val Leu Gln Thr Gly Arg Tyr Asn Glu Ile Leu Glu Lys Arg
 305 310 315 320
 Gly Ala Gln Gly Glu Gln Cys Gly Met Ser Ala Glu Phe Val Lys Val
 325 330 335
 Ile Phe Glu Ala Ile His Glu Glu Ser Val Arg Gln Gln Met Glu Ile
 340 345 350
 Ile Asn Lys
 355

<210> 7442
 <211> 300
 <212> PRT
 <213> B.fragilis

<400> 7442
 Tyr Glu Ser Arg Ser Asp Met Asp Ala Gly Phe Phe Tyr Thr Ile Tyr
 1 5 10 15
 Ser Ile Gly Met Lys Arg Ile Ala Ile Gln Gly Thr Leu Gly Ser Tyr
 20 25 30
 His Asp Ile Ala Ala His Lys Tyr Phe Glu Gly Glu Glu Ile Glu Leu
 35 40 45
 Ile Cys Cys Ala Asn Phe Glu Asp Val Phe Ala Ala Ile Arg Lys Asp
 50 55 60
 Ser Gln Thr Ile Gly Met Leu Ala Ile Glu Asn Thr Ile Ala Gly Ser
 65 70 75 80
 Leu Leu His Asn Asn Glu Leu Leu Arg Gln Ser Gly Thr Gln Ile Ile
 85 90 95
 Gly Glu Tyr Lys Leu Arg Ile Ser His Ser Phe Val Cys Leu Pro Glu
 100 105 110
 Glu Asp Trp Asn Asp Ile Thr Glu Val Asn Ser His Pro Ile Ala Leu
 115 120 125
 Met Gln Cys Arg Glu Phe Leu Asn Gln His Pro Arg Ile Lys Val Val
 130 135 140
 Glu Ala Glu Asp Thr Ala Leu Ser Ala Glu Ile Ile Lys Arg Glu Asn
 145 150 155 160
 Leu Lys Gly His Ala Ala Ile Cys Ser Arg Ala Ala Ala Glu Arg Tyr
 165 170 175
 Gly Met Lys Val Leu Gln Glu Gly Ile Glu Thr Asn Lys His Asn Phe
 180 185 190
 Thr Arg Phe Leu Val Val Ala Asp Pro Trp Gln Val Asp Glu Ile Arg
 195 200 205
 Lys Gln Asn Thr Val Leu Asn Lys Ala Asn Ile Val Phe Thr Leu Pro
 210 215 220
 His Ser Glu Gly Ser Leu Ser Gln Val Leu Ser Ile Leu Ser Phe Tyr
 225 230 235 240
 Asn Ile Asn Leu Thr Lys Ile Gln Ser Leu Pro Ile Ile Gly Arg Glu
 245 250 255
 Trp Glu Tyr Gln Phe Tyr Val Asp Val Ala Phe Asn Asp Tyr Leu Arg
 260 265 270
 Tyr Lys Gln Ser Ile Thr Ala Ile Thr Pro Leu Thr Lys Glu Leu Lys

275 280 285
 Ile Leu Gly Glu Tyr Ala Glu Gly Lys Ser Asn Val
 290 295 300

<210> 7443
 <211> 521
 <212> PRT
 <213> B.fragilis

<400> 7443

Leu Val Ser Gly Lys Val Ile Val Trp Arg Gly Ala Phe Val Lys Arg
 1 5 10 15
 Ser Ser Phe Glu Trp Ser Tyr Lys Lys Asn Gly Asn Met Lys Arg Leu
 20 25 30
 Ile Leu Pro Ile Ala Cys Gly Ile Cys Thr Val Thr Ser Asp Ala Gln
 35 40 45
 Thr Asp Lys Gln Pro His Pro Asn Val Ile Phe Ile Tyr Ala Asp Asp
 50 55 60
 Leu Gly Tyr Lys Asp Leu Ser Cys Thr Gly Ser Arg Phe Tyr Glu Thr
 65 70 75 80
 Pro His Ile Asp Lys Leu Ala Arg Glu Gly Val Trp Phe Thr Gln Ser
 85 90 95
 Tyr Ala Ala Cys Pro Val Ser Ser Pro Ser Arg Ala Ala Leu Leu Thr
 100 105 110
 Gly Lys Tyr Pro Ala Arg Ile Asn Leu Thr Asp Tyr Ile Pro Gly Asp
 115 120 125
 Arg Ala Tyr Gly Pro His Lys Asn Gln Arg Leu Ala Ser Leu Pro Phe
 130 135 140
 Asn Leu His Leu Ser Lys Asp Glu Ile Thr Met Ala Glu Ala Phe Arg
 145 150 155 160
 Gln Asn Gly Tyr Ser Thr Phe Met Ala Gly Lys Trp His Leu Ala Glu
 165 170 175
 Ser Ala Glu Tyr Tyr Pro Glu Gln Asn Gly Phe Asp Ile Asn Ile Gly
 180 185 190
 Gly Asn Asn Thr Gly His Pro Ser Lys Gly Tyr Phe Ser Pro Tyr Gly
 195 200 205
 Asn Pro Gln Leu Lys Asp Gly Pro Glu Gly Glu Tyr Leu Thr Asp Arg
 210 215 220
 Leu Thr Asp Glu Val Ile Arg Tyr Ile Ser Glu Pro Lys Glu Lys Pro
 225 230 235 240
 Phe Phe Val Tyr Leu Ser Tyr Tyr Thr Val His Leu Pro Leu Gln Ala
 245 250 255
 Lys Ala Glu Lys Ile Ala Lys Tyr Arg Arg Arg Leu Ser Arg Ala Val
 260 265 270
 Pro Ala Asp Ser Ser Phe Val Lys Lys Gly Glu Thr Tyr His Lys Leu
 275 280 285
 Val Gln Asp Ile Pro Ala Tyr Ala Ala Met Val Glu Ser Leu Asp Glu
 290 295 300
 Asn Ile Gly Arg Leu Leu Asp Thr Leu His Arg Ser Gly Leu Asp Glu
 305 310 315 320
 Arg Thr Ile Val Val Phe Thr Ser Asp Asn Gly Gly Met Ala Thr Ser
 325 330 335
 Asn Thr Thr Arg Asn Ile Pro Thr Ser Asn Leu Pro Leu Arg Ala Gly
 340 345 350
 Lys Gly Tyr Leu Tyr Glu Gly Gly Ile Lys Val Pro Ala Ile Ile Arg
 355 360 365
 Trp Ser Gly His Leu Lys Gly Arg Gln Val Ser Asp Thr Pro Ile Ile
 370 375 380
 Gly Thr Asp Tyr Tyr Pro Thr Leu Leu Asp Leu Cys Gly Leu Arg Leu

385 390 395 400
 Leu Pro Gly Gln His Val Asp Gly Val Ser Met Lys Pro Val Leu Gln
 405 410 415
 Gly Gly Arg Leu Ser Arg Pro Ser Leu Phe Trp His Tyr Pro His Tyr
 420 425 430
 Ser Gly Gly Leu Gly Gly Arg Pro Ser Ala Ala Ile Arg Glu Gly Asp
 435 440 445
 Tyr Lys Leu Ile Glu Phe Phe Glu Asp His His Val Glu Leu Tyr Asn
 450 455 460
 Val Ile Gln Asp Glu Ser Glu Glu Lys Asp Leu Ser Gln Ile Tyr Pro
 465 470 475 480
 Glu Ile Ala Asp Gly Leu Arg Lys Lys Leu Tyr Leu Trp Tyr Lys Glu
 485 490 495
 Val Gly Ala Arg Met Pro Val Asp Asn Pro His Tyr Val Ser Pro Val
 500 505 510
 Lys Asp Ser Asp Ser Phe Glu Asn Lys
 515 520

<210> 7444

<211> 63

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (57)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 7444

Phe Asn Phe Ile Tyr Lys Phe Leu Asp Gln Gln Lys Val Ala Gln Asp
 1 5 10 15
 Leu Pro Cys Gln Lys Phe His Leu Ile Leu Val Leu Gln Lys Glu Asn
 20 25 30
 Lys Gln Asn Ser Asn Met Thr Trp Pro Lys Ile Gln Ile Lys Ser Glu
 35 40 45
 Lys Leu Thr Thr Phe Trp Arg Ile Xaa Phe Ile His Gly Arg Asn
 50 55 60

<210> 7445

<211> 313

<212> PRT

<213> B.fragilis

<400> 7445

Asp Arg Leu Met Lys Ile Glu Lys Glu Ile Leu Tyr Arg Tyr Phe Asn
 1 5 10 15
 Gly Asp Ala Thr Pro Glu Glu Glu His Lys Ile Arg Gln Tyr Leu Glu
 20 25 30
 Ala Ser Asp Glu Asn Trp Lys Glu Tyr Leu Arg Glu Arg Lys Phe Phe
 35 40 45
 Asp Thr Ile Ile Leu Lys Glu Gln Val Val Ser Glu Glu Lys Gln Met
 50 55 60
 Lys Arg Arg Gln Leu Ile Arg Lys Ile Ser Leu Glu Cys Leu Lys Val
 65 70 75 80
 Ala Ala Val Leu Leu Ile Ala Phe Gly Thr Ala Phe Phe Trp Asn Asn
 85 90 95
 Gln Ser Glu Lys Pro Ala Thr Lys Ser Val Val Asn Thr Leu Lys Gly
 100 105 110
 Gln Met Ala Asn Ile Thr Leu Pro Asp Gly Ser Arg Val Trp Leu Asn

115 120 125
 Ser Asn Thr Arg Ile Glu Tyr Ser Gln His Phe Asp Asp Lys Arg Glu
 130 135 140
 Val Gln Ile Asp Gly Glu Ala Tyr Phe Glu Val Val Arg Asn Thr Gly
 145 150 155 160
 Arg Pro Phe Ile Val Tyr Thr Pro Asp Asp Glu Gln Val Glu Val Leu
 165 170 175
 Gly Thr Lys Phe Tyr Val Glu Ala Tyr Ser Gly Thr Lys Lys Phe Glu
 180 185 190
 Thr Ala Leu Ile Glu Gly Ser Val Arg Val Arg Ala Ala Asn Ser Gln
 195 200 205
 Phe Ile Leu Gln Pro Ser Tyr Lys Ala Val Leu Lys Gly Gly Lys Met
 210 215 220
 Ser Val Glu Lys Ile Thr Asp Phe Asp Ile Tyr Arg Trp Arg Glu Gly
 225 230 235 240
 Leu Ile Cys Phe Lys Asn Arg His Phe Ser Glu Ile Leu Glu Glu Leu
 245 250 255
 Lys Lys Tyr Tyr Gly Val His Ile Arg Phe Asp Ala Ala Lys Ile Asn
 260 265 270
 Asn Pro Val Leu Thr Val Lys Phe Arg Leu Ser Asp Gly Ile Glu Tyr
 275 280 285
 Ala Leu Arg Val Leu Gln Lys Asp Val Lys Phe Lys Tyr Val Arg Asn
 290 295 300
 Asp Glu Glu Asn Thr Phe Val Ile Lys
 305 310

<210> 7446
 <211> 99
 <212> PRT
 <213> B.fragilis

<400> 7446
 Ile Val Ile Ile Leu Tyr Asn Ile Lys Thr Pro Ser Leu Ser Ser Leu
 1 5 10 15
 Ala Asp Gln Val His Lys Leu Phe Thr Gly Leu Ser Leu Ile Lys Ser
 20 25 30
 Ser Cys Lys Val Gly Ser Ser Ser Tyr Gly Ile Leu Phe Phe His Ser
 35 40 45
 Ala His Leu His Thr His Met Leu Gly Phe His His Asp His Tyr Ala
 50 55 60
 Gln Arg Ile Gln Arg Phe Leu Asn Thr Leu Phe Asn Leu Gln Arg His
 65 70 75 80
 Pro Phe Leu His Leu Gln Pro Met Arg Glu Asn Ile Asp His Thr Gly
 85 90 95
 Tyr Phe Thr

<210> 7447
 <211> 195
 <212> PRT
 <213> B.fragilis

<400> 7447
 Gln Asn Ser Met Ser Ala Thr Ile Asn Asp Leu Ala Ser Phe Asn Lys
 1 5 10 15
 Phe Phe Thr Glu Asn Gln His Arg Phe Ile Arg Phe Ala Trp Thr Tyr
 20 25 30
 Thr Arg Asp Glu Val Val Ala Glu Asp Ile Val Met Glu Ser Leu Met
 35 40 45

Ala	Tyr	Trp	Glu	Asn	Arg	Asp	His	Met	Thr	Pro	Glu	Ile	Asn	Pro	Ala
50						55					60				
Ala	Tyr	Val	Leu	Thr	Val	Val	Lys	Asn	Lys	Cys	Leu	Asn	Tyr	Leu	Arg
65					70					75					80
His	Leu	Gln	Leu	Val	Asn	Asp	Val	Ser	Asp	Arg	Val	Ala	Ser	His	Ser
				85					90					95	
Glu	Trp	Glu	Leu	Ser	Asn	Arg	Ile	Ala	Thr	Leu	Asp	Ala	Cys	Glu	Pro
			100					105					110		
Asn	Ala	Leu	Phe	Ala	Ser	Glu	Val	Gln	Asp	Ile	Ile	Asp	Arg	Val	Ile
		115					120					125			
Ser	Arg	Leu	Ser	Ala	Thr	Thr	Ala	Arg	Ile	Phe	Leu	Leu	Ser	Arg	Tyr
	130					135					140				
Asp	Asn	Lys	Ser	His	Lys	Glu	Ile	Ala	Glu	Ile	Met	Gly	Met	Thr	Val
145					150					155					160
Lys	Gly	Val	Glu	Phe	His	Ile	Ser	Lys	Ala	Thr	Lys	Glu	Leu	Arg	Val
				165					170					175	
Ala	Leu	Lys	Asp	Tyr	Leu	Val	Leu	Phe	Pro	Phe	Leu	Cys	Asp	Phe	Leu
			180					185					190		
Ser	Arg	Asn													
		195													

<210> 7448

<211> 1128

<212> PRT

<213> B.fragilis

<400> 7448

Ser	Lys	Asp	Met	Lys	Asn	Thr	Arg	Cys	Thr	Asp	Phe	Cys	Val	Pro	Lys
1				5					10					15	
Asn	Ser	Ser	Ile	Lys	Gln	Leu	Leu	Lys	Thr	Met	Arg	Val	Thr	Ile	Phe
			20					25				30			
Leu	Leu	Phe	Phe	Cys	Val	Phe	Ser	Thr	Ile	Ala	Gly	Thr	Val	Asn	Ser
		35				40					45				
Gln	Asn	Ala	Arg	Val	Ser	Ile	His	Lys	Thr	Asn	Val	Pro	Leu	Glu	Glu
	50					55				60					
Ile	Leu	Asn	Glu	Ile	Glu	His	Gln	Thr	Asp	Tyr	Leu	Phe	Met	Tyr	Ser
65				70						75					80
Asn	Asn	Ile	Asp	Val	Lys	Glu	Arg	Thr	Ser	Ile	Arg	Val	Ser	Glu	Lys
			85					90						95	
Pro	Val	Ser	Glu	Val	Leu	Lys	Lys	Leu	Leu	Gly	Asn	Lys	Ile	Ala	Tyr
			100					105					110		
Glu	Met	Glu	Gly	Met	His	Ile	Ile	Leu	Ser	Asp	Lys	Arg	Glu	Asn	Gln
		115				120					125				
Thr	Ala	Ile	Ala	Gln	Gln	Ala	Asn	Lys	Ile	Gln	Val	Lys	Gly	Asn	Val
	130					135					140				
Thr	Asp	Met	Ala	Gly	Glu	Pro	Val	Ile	Gly	Ala	Ser	Ile	Leu	Glu	Lys
145					150					155					160
Gly	Thr	Thr	Asn	Gly	Ile	Val	Thr	Asp	Phe	Asn	Gly	Asp	Phe	Ser	Leu
			165					170						175	
Asn	Val	Asn	Pro	Gly	Ala	Val	Leu	Val	Ser	Tyr	Ile	Gly	Tyr	Ser	
			180					185				190			
Ala	Gln	Glu	Val	Lys	Val	Ile	Pro	Gly	Lys	Val	Leu	Lys	Ile	Lys	Ile
		195					200				205				
Lys	Glu	Asp	Ala	Glu	Leu	Leu	Asp	Glu	Val	Val	Val	Gly	Tyr	Gly	
	210					215					220				
Thr	Gln	Lys	Lys	Val	Asn	Leu	Thr	Gly	Ala	Val	Glu	Thr	Val	Asp	Ala
225					230					235					240
Asp	Val	Ile	Glu	Asn	Arg	Pro	Ile	Arg	Ser	Ala	Thr	Asp	Ala	Leu	Gln
				245					250					255	

Gly	Thr	Val	Ser	Gly	Leu	Thr	Val	Thr	Ser	Gly	Thr	Gly	Lys	Pro	Gly
			260						265				270		
Glu	Phe	Ala	Ser	Phe	Lys	Ile	Arg	Gly	Asn	Thr	Ser	Val	Asn	Ser	Ala
		275					280					285			
Gly	Ala	Leu	Val	Ile	Ile	Asp	Gly	Met	Pro	Gly	Asp	Ile	Asn	Thr	Val
	290					295					300				
Asn	Pro	Gln	Asp	Ile	Glu	Thr	Ile	Ser	Val	Leu	Lys	Asp	Ala	Ala	Ser
305					310					315					320
Ala	Ala	Ile	Tyr	Gly	Ala	Arg	Ala	Ala	Glu	Gly	Val	Val	Leu	Val	Thr
				325					330					335	
Thr	Lys	Lys	Gly	Thr	Ser	Glu	Lys	Val	Lys	Val	Glu	Tyr	Thr	Gly	Asn
			340					345					350		
Phe	Ser	Phe	Asn	Thr	Pro	Thr	Arg	Leu	Pro	Glu	Ser	Asn	Thr	Gly	Leu
		355					360					365			
Asp	His	Ala	Leu	Leu	Ser	Asn	Val	Ala	Phe	Thr	Asn	Ala	Gly	Leu	Ala
	370					375					380				
Ile	Pro	Phe	Ser	Gln	Lys	Ala	Ile	Asp	Ala	Ile	Lys	Asp	Pro	Asn	Thr
385					390					395					400
Ile	Ala	Ile	Pro	Asn	Gly	Lys	Glu	Trp	Thr	Tyr	Thr	Ser	Asp	Met	Asp
				405					410					415	
Trp	Ile	Asp	Leu	Met	Met	Asp	His	Ser	Phe	Gln	Gln	Thr	His	Asn	Leu
			420					425					430		
Thr	Ile	Ser	Lys	Ala	Ser	Asp	Arg	Leu	Lys	Tyr	Leu	Phe	Ser	Ile	Gly
		435					440					445			
Trp	Leu	Asp	Gln	Asn	Gly	Met	Phe	Ser	Glu	Tyr	Gly	Pro	Asp	Asn	Tyr
	450					455					460				
Asp	Arg	Ile	Asn	Leu	Arg	Ser	Asn	Ile	Ser	Val	Glu	Leu	Ile	Lys	Asp
465					470					475					480
Lys	Leu	Ser	Leu	Asp	Ser	Arg	Ile	Ser	Tyr	Ser	Arg	Gly	Val	Asn	Leu
				485					490					495	
Tyr	His	Ala	Ala	Glu	Gly	Ser	Trp	Ser	Ile	Pro	Tyr	Ile	Thr	Phe	Ile
			500					505					510		
Gln	Ala	Gly	Pro	Asn	Met	Pro	Val	Tyr	Asp	Pro	Asn	Gly	Asn	Tyr	Ser
		515					520					525			
Arg	His	Arg	Met	Gln	Leu	Asn	Pro	Ile	Gln	Ala	Leu	Lys	Glu	Gly	Gly
	530					535					540				
Glu	Gly	Arg	Thr	Arg	Asn	Gln	Arg	Ile	Glu	Gly	Val	Phe	Thr	Leu	Glu
545					550					555					560
Tyr	Lys	Pro	Val	Lys	Gly	Leu	Ser	Leu	Arg	Ala	Val	Gly	Gly	Ala	Asn
				565					570					575	
Ile	Leu	Asp	Gly	Gln	Lys	Lys	Glu	Trp	Arg	Arg	Ala	Tyr	Gly	Lys	Tyr
			580					585					590		
Gly	Val	Asp	Gly	Leu	Ile	Ser	Thr	Ala	Phe	Gly	Gln	Lys	Ser	Pro	Asn
		595					600					605			
Ser	Val	Thr													

				725					730					735	
Glu	Lys	Phe	Met	Gln	Asn	Gln	His	Ile	Phe	Asp	Asn	Leu	Lys	Leu	Arg
			740						745					750	
Ala	Ser	Trp	Gly	Gln	Leu	Gly	Asn	Gln	Asn	Gly	Leu	Gly	Leu	Tyr	Asp
			755						760					765	
His	Ile	Ala	Ser	Tyr	Asn	Ile	Asn	Gly	Tyr	Tyr	Pro	Phe	Lys	Ser	Glu
	770					775					780				
Leu	Gly	Gln	Trp	Ala	Val	Ile	Ser	Lys	Leu	Pro	Ser	Glu	Ser	Arg	Thr
785					790					795					800
Trp	Glu	Thr	Val	Glu	Val	Lys	Asn	Ile	Ala	Val	Asp	Met	Ala	Phe	Leu
				805					810						815
Arg	Asn	Arg	Leu	Thr	Val	Thr	Gly	Glu	Tyr	Phe	Ile	Lys	Lys	Asn	Lys
			820						825					830	
Asp	Met	Leu	Val	Ser	Ile	Glu	Ile	Pro	Ser	Ile	Ile	Gly	Ile	Asp	Val
		835					840					845			
Pro	Thr	Gly	Asn	Tyr	Gly	Glu	Leu	Lys	Val	Lys	Gly	Trp	Glu	Val	Thr
	850					855					860				
Val	Gly	Trp	Gln	Asp	Lys	Ile	Lys	Asp	Phe	Ser	Tyr	Gly	Ala	Arg	Phe
865					870				875						880
Asn	Leu	Ser	Asp	Gln	Lys	Asp	Lys	Leu	Val	Asp	Tyr	Gly	Val	Glu	Tyr
				885					890						895
Asn	Gly	Phe	Val	Ala	Gly	Val	Asn	Gln	Lys	Val	Gln	Gly	Tyr	Ser	Leu
			900					905						910	
Gly	Ser	Ile	Phe	Gly	Tyr	Arg	Thr	Asp	Gly	Tyr	Phe	Thr	Ser	Glu	Glu
		915					920							925	
Glu	Val	Lys	Asn	Ser	Ala	Ala	Phe	Asn	Lys	Ala	Ile	Thr	Gly	Val	Gly
	930					935					940				
Asp	Ile	Lys	Tyr	Ile	Asp	Lys	Asp	Gly	Asp	Gly	Lys	Ile	Ser	Ala	Pro
945					950					955					960
Asn	Asp	Leu	Glu	Tyr	Leu	Gly	Thr	Thr	Thr	Pro	Arg	Tyr	Thr	Phe	Gly
				965					970						975
Leu	Asn	Leu	Thr	Ala	Ala	Trp	Lys	Gly	Phe	Asp	Leu	Gly	Val	Leu	Leu
			980					985						990	
Gln	Gly	Val	Gly	Lys	Arg	Asn	Phe	Tyr	Leu	Ser	Ser	Glu	Val	Met	Asn
		995					1000					1005			
Pro	Tyr	Tyr	Ala	Thr	Trp	Asn	Asn	Phe	Ser	Tyr	Lys	Met	His	Asn	Asp
	1010					1015					1020				
Tyr	Trp	Thr	Pro	Glu	Asn	Pro	Asn	Ala	Ala	Phe	Pro	Arg	Tyr	Tyr	Ala
1025					1030					1035					1040
Gly	Ala	Asn	His	Asn	Tyr	Gln	Ile	Ser	Asp	His	Trp	Leu	Gln	Asn	Ala
				1045					1050						1055
Ala	Tyr	Val	Arg	Leu	Lys	Asn	Leu	Gln	Leu	Gly	Tyr	Thr	Ile	Ser	Pro
			1060					1065					1070		
Lys	Leu	Thr	Lys	Ser	Trp	Gly	Ile	Gln	Arg	Leu	Arg	Val	Tyr	Phe	Ser
		1075					1080					1085			
Gly	Asp	Asn	Leu	Cys	Glu	Tyr	Ser	Lys	Leu	Asn	Asp	Asn	Phe	Asp	Pro
	1090					1095					1100				
Glu	Leu	Ser	Asp	Ile	Asn	Gly	Tyr	Val	Tyr	Pro	Ile	Met	Arg	Asn	Phe
1105					1110				1115						1120
Ser	Phe	Gly	Ile	Asn	Val	Thr	Leu								
				1125											

<210> 7449

<211> 493

<212> PRT

<213> B.fragilis

<400> 7449

Leu Phe Lys Met Ile Phe Thr Met Lys Ala Thr Lys Ile Leu Ile Cys

1	5	10	15
Ile Leu Cys Cys Thr Trp Ile Cys Ser Cys Ser Leu Leu Glu Val Asp			
20	25	30	
Pro Val Ser Thr Ile Thr Ser Gln Ser Phe Trp Lys Thr Pro Gly Asp			
35	40	45	
Ala Lys Ala Tyr Leu Thr Gly Ile Tyr Asn Lys Val Arg Asp Leu Asn			
50	55	60	
Asn Thr Ser Tyr Tyr Gly Glu Asp Arg Gly Asp Ala Phe Lys Ala Gly			
65	70	75	80
Glu Ile Gly Pro Thr Ser Val Ala Trp Ala His Thr Leu Leu Glu Ser			
85	90	95	
Asn Ala Pro Ser Tyr Arg Ser Ala Tyr Asn Ile Ile His His Ala Asn			
100	105	110	
Leu Leu Phe Asn Lys Ile Glu Ser Leu Lys Phe Thr Asn Glu Thr Glu			
115	120	125	
Lys Asn Arg Ile Lys Ala Glu Cys His Phe Leu Arg Ala Tyr Thr Tyr			
130	135	140	
Phe Leu Ile Val Arg Ile Trp Gly Asp Ala Pro Ile Ile Thr Asp Pro			
145	150	155	160
Val Leu Ser Asp Asn Val Glu Leu Lys Pro Arg Ser Pro Lys Glu Asp			
165	170	175	
Val Met Lys Leu Ile Leu Glu Asp Ile Glu Gln Ala Val Leu Leu Phe			
180	185	190	
Pro Glu Asp Gly Tyr Ile Asn Lys Asn Leu Ala Ser Lys Pro Ala Ala			
195	200	205	
Tyr Ala Leu Lys Ala Asp Val Leu Met Trp Lys Ala Lys Val Leu Asn			
210	215	220	
Gly Gly Asn Ala Asp Leu Glu Glu Ala Ile Lys Ala Ile Asp Gln Val			
225	230	235	240
Gly Gly Ser Gly Val Ser Leu Leu Pro Asp Tyr Ala Lys Val Phe Ala			
245	250	255	
Asn Asp Asn Lys Lys Asn Asn Glu Ile Ile Phe Ser Phe Tyr Phe Glu			
260	265	270	
Arg Tyr Glu Thr Gly Asn Leu Ser Ile Ala Thr Asn Thr Thr Ser Arg			
275	280	285	
Thr Asp Asn Leu Ser Met Ala Val Asn Leu Ala Asp Ala Ala Thr Ser			
290	295	300	
Pro Asn Gln Ser Arg His Val Tyr Ala Pro Ser Asp Lys Ala Arg Glu			
305	310	315	320
Leu Tyr Leu Lys Tyr Pro Gly Asp Arg Arg Tyr Lys Val Ala Met Ile			
325	330	335	
Asp Leu Val Asp Lys Asp Gly Asn Leu Ile Leu Thr Gln Thr Asn Lys			
340	345	350	
Phe Arg Gly Lys Ala Tyr Ser Asp Asp Arg Tyr Phe Asp Asp Asp Leu			
355	360	365	
Ile Ala His Arg Trp Gly Asp Leu Leu Leu Leu Arg Ala Glu Ala Asn			
370	375	380	
Ala Ala Leu Asn Lys Ile Ser Glu Ser Leu Val Asp Leu Asn Glu Val			
385	390	395	400
Arg Asp Arg Ala Gly Leu Glu Pro Tyr Asp Gly Pro Lys Asp Lys Ile			
405	410	415	
Ala Val Glu Lys Glu Ile Cys Asp Glu Arg Leu Arg Glu Leu Phe Ile			
420	425	430	
Glu Gln Lys Arg Trp Phe Asp Leu Val Arg Phe His Cys Gly Gly Thr			
435	440	445	
Ile Asp Ile Tyr Lys Glu Val Pro Asn Leu Asn Asp Lys Pro Gly Tyr			
450	455	460	
Pro Leu Tyr Phe Pro Ile Asn Tyr Asn Asp Met Val Leu Asn Asp Lys			
465	470	475	480

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 99
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Leu Val Gln Thr Asp Gly Tyr Glu Ser Asn Val Glu Arg
 485 490

<210> 7450
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 7450

Tyr Ser Ser Val Ile Met Leu Glu Lys Glu Glu Ile Ile Ser Pro Ala
 1 5 10 15
 Leu Glu Asp Leu Lys Asn His Tyr Arg Ser Ile Ile Thr Leu Leu Gly
 20 25 30
 Glu Asp Ala Glu Arg Glu Gly Leu Leu Lys Thr Pro Glu Arg Val Ala
 35 40 45
 Lys Ala Met Leu Thr Leu Thr Lys Gly Tyr His Met Asp Pro His Glu
 50 55 60
 Val Leu Arg Ser Ala Lys Phe Gln Glu Glu Tyr Ser Gln Met Val Ile
 65 70 75 80
 Val Lys Asp Ile Asp Phe Phe Ser Leu Cys Glu His His Met Leu Pro
 85 90 95
 Phe Tyr Gly Lys Ala His Val Ala Tyr Ile Pro Asn Gly Tyr Ile Thr
 100 105 110
 Gly Leu Ser Lys Ile Ala Arg Val Val Asp Ile Phe Ser His Arg Leu
 115 120 125
 Gln Val Gln Glu Arg Met Thr Leu Gln Ile Lys Glu Cys Ile Gln Glu
 130 135 140
 Thr Leu Asn Pro Leu Gly Val Met Val Val Val Glu Ala Lys His Met
 145 150 155 160
 Cys Met Gln Met Arg Gly Val Glu Lys Gln Asn Ser Val Thr Thr Thr
 165 170 175
 Ser Asp Phe Thr Gly Ala Phe Asn Gln Ala Lys Thr Arg Glu Glu Phe
 180 185 190
 Met Asn Leu Ile Arg Gln Arg
 195

<210> 7451
 <211> 286
 <212> PRT
 <213> B.fragilis

<400> 7451

Tyr Ile Gly Leu Ser Leu Leu Met Phe Ala Lys Trp Asp Val Ser Val
 1 5 10 15
 Leu Lys Met Leu Val Phe Leu Leu Lys Thr Ser Phe Ile Cys Gln Thr
 20 25 30
 Asn Lys Ile Asn Leu Ile Leu Thr Lys Leu Asn Cys Tyr Thr Met Asp
 35 40 45
 Thr Leu Lys Leu His Gly Gln Ala Ile Thr Leu Val Asp Gln Val Glu
 50 55 60
 Asp Asn Leu Leu Thr Tyr Phe Arg Thr Lys Asp Leu Arg Ala Gly Asp
 65 70 75 80
 Ala Ile Pro Asn Glu Met Glu Leu Ala Ala Leu Gly Val Ala Arg
 85 90 95
 Ser Val Leu Arg Glu Ala Leu Ser Arg Leu Lys Met Val Gly Met Ile
 100 105 110
 Glu Thr Arg Thr Arg Arg Gly Met Ile Leu Thr Glu Pro Ser Ile Leu
 115 120 125
 Gly Gly Met Lys Arg Val Val Asp Pro Arg Ile Leu Ser Glu His Ser

130 135 140
 Leu Phe Asp Leu Leu Gly Phe Arg Ile Ala Leu Glu Leu Gly Ile Cys
 145 150 155 160
 Ser Asp Leu Phe Gln Asn Ile Thr Pro Glu Asp Ile Val Glu Leu Lys
 165 170 175
 Glu Ile Val Arg Leu Gly Ile Ala Phe Glu Asn Asn Glu Tyr Ala Pro
 180 185 190
 Ile Ser Glu Phe Thr Phe His Ala Lys Leu Tyr Glu Ile Thr Gly Asn
 195 200 205
 Ala Thr Ile Arg Glu Phe Gln Glu Ile Ile His Pro Val Met Val Phe
 210 215 220
 Val Lys Asp Lys Phe Lys Glu Leu Leu Glu Pro Ile Asn Ile Glu Ile
 225 230 235 240
 Lys Glu Arg Gly Glu Leu Val Thr His Ala Asp Leu Leu Gly Phe Leu
 245 250 255
 Glu Lys His Asp Glu Ala Gly Tyr Arg Lys Ala Leu Glu Lys His Phe
 260 265 270
 Ala Val Tyr Lys Ile Phe Met Lys Arg Arg Ile Val Asn Glu
 275 280 285

<210> 7452

<211> 542

<212> PRT

<213> B.fragilis

<400> 7452

His Phe Asn Ser Trp Ser Lys Met Lys Asn Ile Tyr Leu Phe Leu Leu
 1 5 10 15
 Ser Val Val Ile Leu Cys Ser Cys Asn Asp Phe Leu Asp Arg Glu Pro
 20 25 30
 Lys Thr Asn Leu Ser Pro Gly Ser Phe Trp Lys Ser Glu Glu Asp Leu
 35 40 45
 Arg Leu Ala Ala Asn Val Phe Tyr Gln Asn Met Asn Arg Ser Tyr Thr
 50 55 60
 Leu Asp Asn Gln Ser Ala Asp Gly Phe Ala Asn Val Gly Asn Leu Val
 65 70 75 80
 Ser Ser Gly Thr His Ala Pro Gly Asn Thr Asp Gly Ile Trp Thr Thr
 85 90 95
 Ala Tyr Lys Gln Ile Arg His Ala Asn Asn Phe Leu Glu Asn Tyr Glu
 100 105 110
 Lys Ala Glu Val Ser Glu Ala Thr Lys Asn Arg Tyr Ala Gly Glu Ala
 115 120 125
 Arg Phe Phe Arg Ala Tyr Phe Tyr Phe Asn Leu Val Lys Arg Phe Gly
 130 135 140
 Asp Val Pro Tyr Val Leu Arg Thr Leu Asp Met Asp Ser Glu Glu Leu
 145 150 155 160
 Met Gly Pro Arg Val Pro Lys Glu Gln Val Ile Ala Gly Ile Ile Glu
 165 170 175
 Asp Leu Glu Phe Ala Glu Thr His Ile Pro Leu Lys Ser Lys Leu Pro
 180 185 190
 Thr Asp Val Gly Arg Leu Thr Lys Gly Ala Ala Gln Ala Met Leu Ala
 195 200 205
 Arg Val Ala Leu Tyr Ile Gly Thr Trp Asn Lys Phe His Gly Ser Gly
 210 215 220
 Glu Tyr Lys Ser Tyr Leu Gln Ile Ala Lys Glu Ala Ser Lys Arg Leu
 225 230 235 240
 Ile Asp Ser Lys Glu Tyr Ser Leu Tyr Ala Asp Tyr Arg Asn Leu Phe
 245 250 255
 Leu Leu Pro Gly Glu Asp Ser Asn Glu His Ile Leu Ser Phe Arg Tyr

260	265	270
Ser Ala Glu Ala Asp Thr Tyr Asn Pro Arg Ile Arg Ala Thr Ile Ala		
275	280	285
Asp Leu Ser His Ser Pro Thr Lys Val Leu Ala Asp Ala Phe Leu Cys		
290	295	300
Lys Asp Gly Leu Pro Leu Glu Lys Ser Ala Tyr Arg Val Glu Tyr Leu		
305	310	315
Pro Ala Gly Lys Glu Phe Glu Asn Arg Asp Pro Arg Met Ala Leu Thr		
325	330	335
Ile Trp Lys Pro Gly Asp Pro Phe Leu Gly Lys Pro Phe Val Pro Asn		
340	345	350
Leu Thr Ser Gln Thr Arg Thr Gly Tyr Met Phe Lys Lys Tyr Gly Asp		
355	360	365
Glu Glu Ser Tyr Ser Asn Met Lys Ser Arg Ile Asp Glu Ile Leu Ile		
370	375	380
Arg Tyr Ala Glu Val Leu Leu Thr Phe Ala Glu Ala Ser Phe Glu Leu		
385	390	395
Asp Asp Arg Ile Ser Asp Glu Asp Leu Asn Leu Ser Val Asn Ala Leu		
405	410	415
Arg Asn Arg Phe Glu Gly Asp Pro Asn Arg Leu Pro Asp Leu Thr Asn		
420	425	430
Ala Phe Val Val Glu His Gly Leu Ser Met Arg Asp Glu Ile Arg Arg		
435	440	445
Glu Arg Arg Val Glu Leu Ala Glu Ser Phe Arg Tyr Asp Asp Ile		
450	455	460
Ile Arg Trp Lys Thr Ala Glu Thr Glu Leu Pro Ala Ala Ile Leu Gly		
465	470	475
Ala Lys Phe Asp Pro Glu Leu Tyr Pro Ser Thr Val Pro Gly Lys Asp		
485	490	495
Val Ile Leu Asp Lys Asn Gly Phe Ile Leu Val Gln Asn Ala Glu Ser		
500	505	510
Arg Thr Phe Asp Ser Ser Lys Asp Tyr Leu Phe Pro Leu Pro Leu Arg		
515	520	525
Glu Val Ser Leu Asn Pro Asn Leu Lys Gln Asn Pro Asn Trp		
530	535	540

<210> 7453

<211> 133

<212> PRT

<213> B.fragilis

<400> 7453

Thr Ile Cys Pro Phe Lys Val Phe Leu Leu Thr Leu Ser Leu Tyr Lys	
1	5 10 15
Ile Leu Asp Met Ser Ile Glu Ser Phe Asn Leu Leu Leu Val Met	
20	25 30
Gly Leu Met Ala Leu Val Val Phe Ile Ala Leu Tyr Phe Val Arg Ala	
35	40 45
Gly Tyr Gly Met Phe Arg Ser Arg Ser Trp Gly Ile Ser Ala Asn Asn	
50	55 60
Lys Ile Ala Trp Ile Leu Met Glu Ala Pro Val Phe Leu Val Met Gly	
65	70 75 80
Trp Cys Gly Gly His Ser Asp Arg Arg Phe Leu Pro Val Glu Leu Thr	
85	90 95
Phe Phe Leu Phe Phe Gln Leu His Tyr Phe Pro Lys Gly Phe Cys Phe	
100	105 110
Ser Phe Pro Asp Glu Arg Lys Glu Gln Asp Ala Gly Thr His Ser Phe	
115	120 125
Asp Gly Ser Asp Leu	

130

<210> 7454
 <211> 201
 <212> PRT
 <213> B.fragilis

<400> 7454

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Asn Thr Val Thr Thr Met Ala Lys Gly Asn Arg Thr Val Pro Glu Ile
1          5          10          15
Asn Ser Ser Ser Thr Ala Asp Ile Ala Phe Leu Leu Leu Ile Phe Phe
20          25          30
Leu Ile Thr Thr Ser Met Asp Thr Asp Arg Gly Leu Ala Arg Gln Leu
35          40          45
Pro Pro Pro Pro Glu Lys Asp Gln Val Asp Asn Asp Val Val Val Lys
50          55          60
Asp Arg Asn Val Leu Gln Ile Phe Leu Asn Phe Gln Asn Gln Leu Met
65          70          75          80
Cys Gly Gly Glu Ile Val Asp Val Lys Gln Leu Arg Glu Lys Ala Lys
85          90          95
Glu Phe Ile Ala Asn Pro Tyr Asn Asp Glu Lys Leu Pro Glu Lys His
100         105         110
Ala Lys Asp Val Pro Phe Phe Gly Asn Val Met Val Thr Glu Asn His
115         120         125
Val Ile Ser Leu Gln Ser Asp Arg Gly Ser Ser Tyr Gln Ala Tyr Phe
130         135         140
Asp Val Gln Asn Glu Leu Val Ala Ala Tyr Asn Glu Leu Arg Asp Glu
145         150         155         160
Leu Ala Gln Glu Lys Trp Gln Lys Asn Tyr Ala Asp Leu Asn Glu Asp
165         170         175
Gln Gln Lys Ala Ile Arg Asp Ile Phe Pro Gln Lys Ile Ser Glu Ala
180         185         190
Glu Pro Lys Gly Val Lys Lys Asn Asn
195         200

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<210> 7455
 <211> 183
 <212> PRT
 <213> B.fragilis

<400> 7455

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Ser Ala Pro Ala His Arg Trp Lys Ser Cys Gly Ile Ile Pro His Arg
1          5          10          15
Thr Met Ser Arg Ile Ser Ile Ile Ala Ala Val Asp Ser Arg Met Ala
20          25          30
Ile Gly Phe Gln Asn Lys Leu Leu Phe Trp Leu Pro Asn Asp Leu Lys
35          40          45
Arg Phe Lys Ala Leu Thr Thr Gly Asn Thr Ile Ile Met Gly Arg Lys
50          55          60
Thr Phe Glu Ser Leu Pro Lys Gly Ala Leu Pro Asn Arg Arg Asn Val
65          70          75          80
Val Leu Ser Ser Asn Pro Ala Ala Glu Cys Pro Gly Ala Glu Val Phe
85          90          95
Thr Ser Leu Glu Ala Ala Leu Glu Ser Cys Gln Ala Glu Glu Lys Val
100         105         110
Tyr Ile Ile Gly Gly Ala Ser Val Tyr Arg Gln Ala Ile Ser Leu Ala
115         120         125
Asp Glu Leu Cys Leu Thr Glu Val Asn Asp Thr Ala Pro Glu Ala Asp
130         135         140

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Ala Phe Phe Pro Ala Val Asp Thr Thr Ile Trp His Glu Lys Ser Arg
 145 150 155 160
 Glu Val His Pro Ala Asp Glu Lys His Leu Cys Ser Tyr Ala Phe Val
 165 170 175
 Asp Tyr Val Arg Glu Ile Asp
 180

<210> 7456

<211> 405

<212> PRT

<213> B.fragilis

<400> 7456

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
 290 295 300
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
 305 310 315 320
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
 325 330 335
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
 340 345 350
 Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
 355 360 365

Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
 370 375 380
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
 385 390 395 400
 Pro Ala Ser Gly Ser
 405

<210> 7457
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 7457

Asn Lys Ser Ala Ile Val Ser Thr Phe Val Lys Thr Ile Asn Ser His
 1 5 10 15
 Asp Met Lys Leu Ile Leu Thr Leu Phe Thr Cys Leu Phe Val Thr Gly
 20 25 30
 Cys Ala Tyr Ala Gln Asn Phe Ser Asp Tyr Phe Thr Asn Lys Thr Leu
 35 40 45
 Arg Ile Asp Tyr Leu Phe Thr Gly Asn Ala Asp Lys Gln Ser Ile Cys
 50 55 60
 Leu Asp Glu Leu Ser Glu Leu Pro Val Trp Ala Gly Arg Arg His His
 65 70 75 80
 Leu Pro Glu Leu Pro Leu Glu Gly Asn Gly Gln Ile Val Met Arg Asp
 85 90 95
 Val Ala Ser Gly Lys Val Ile Tyr Thr Thr Ser Phe Ser Ser Leu Phe
 100 105 110
 Gln Glu Trp Leu Glu Thr Asp Glu Ala Lys Glu Val Thr Lys Gly Phe
 115 120 125
 Glu Asn Thr Tyr Leu Leu Pro Tyr Pro Ile Lys Pro Ala Glu Val Glu
 130 135 140
 Ile Thr Leu Arg Asn Asn Lys Arg Glu Val Ser Ala Asn Leu Lys His
 145 150 155 160
 Val Val Lys Pro Asp Asp Ile Leu Ile His Lys Lys Gly Leu Thr His
 165 170 175
 Ile Thr Pro His Lys Tyr Leu Leu Lys Ser Gly Asn Glu Glu Gln Cys
 180 185 190
 Ile Asp Val Ala Ile Leu Ala Glu Gly Tyr Thr Thr Ser Glu Met Glu
 195 200 205
 Thr Phe Tyr Lys Asp Ala Ala Ile Ala Cys Glu Ala Leu Phe Ser His
 210 215 220
 Glu Pro Phe Gln Ser Met Lys Asn Arg Phe Asn Met Val Val Val Ala
 225 230 235 240
 Ser Leu Ser Ala Asp Ser Gly Val Ser Ala Pro Lys Gln Gly Ala Trp
 245 250 255
 Lys His Ser Ala Phe Arg Phe Pro Leu Arg Tyr Phe Leu Phe Arg Pro
 260 265 270
 Leu Ser Asp Tyr Gln Pro Gly Lys Ser Asn Lys Arg Arg Ile Gly Arg
 275 280 285
 His Pro Leu
 290

<210> 7458
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 7458

Ser Met Ser Ala Gly Leu Val Ser Arg Glu Lys Ile Asp Glu Val Leu

1	5	10	15
Asn Glu Gly Phe	Glu Ala Val Gln Met	Ala Arg Ala Leu	Leu Asn Glu
20	25	30	
Pro Gly Phe Val	Asn Arg Met Arg Arg	Glu Glu Lys Ala	Arg Cys Asn
35	40	45	
Cys Gly His Ser	Asn Tyr Cys Ile Gly	Arg Met Tyr Thr	Ile Glu Met
50	55	60	
Ala Cys His Arg	His Leu Thr Glu Glu	Leu Pro Leu Cys	Leu Lys Lys
65	70	75	80
Glu Ile Glu Gln	Leu Glu Asn Lys		
85			

<210> 7459

<211> 132

<212> PRT

<213> B.fragilis

<400> 7459

Ser Arg Ser Ala	Arg Ser Ser Ala	Leu Ile Ser Ile	Tyr Val Phe Leu
1	5	10	15
Leu His Arg Met	Ser Pro Pro Met	Phe Leu Pro Asn	Thr Ala Gly Ser
20	25	30	
Pro Tyr Thr Ser	Ser Lys Ser Ser	Cys Asn Trp Lys	Ala Thr Pro Ile
35	40	45	
Cys Met Pro Lys	Ser Tyr Arg Phe	Ser Ala Ser Ser	Gly Glu Ala Pro
50	55	60	
Pro Lys Ile Ala	Pro Ile Phe Lys	Leu Ala Ala Asn	Lys Thr Ala Val
65	70	75	80
Phe Lys Arg Ile	Ile Ser Arg Tyr	Ser Ser Ser Phe	Thr Ser Ser Arg
85	90	95	
Asp Ser Lys Phe	Ile Ser Ile Cys	Cys Pro Ser Gln	Ile Ser Ser Ala
100	105	110	
Val Arg Leu Asn	Lys Ser Ile Thr	Ser Leu Arg Cys	Ser Asp Glu Leu
115	120	125	
Ala Ala Ile Tyr			
130			

<210> 7460

<211> 271

<212> PRT

<213> B.fragilis

<400> 7460

Pro Lys Lys Tyr	Thr Ile Arg Met	Lys Gln Tyr Leu	Asp Leu Leu Asp
1	5	10	15
Arg Val Leu Thr	Glu Gly Ile Glu	Lys Gly Asp Arg	Thr Gly Thr Gly
20	25	30	
Thr Ile Ser Val	Phe Gly His Gln	Met Arg Phe Asn	Leu Asp Glu Gly
35	40	45	
Phe Pro Cys Leu	Thr Thr Lys Lys	Leu His Leu Lys	Ser Ile Ile Tyr
50	55	60	
Glu Leu Leu Trp	Phe Leu Lys Gly	Asp Thr Asn Val	Lys Tyr Leu Gln
65	70	75	80
Asp His Gly Val	Arg Ile Trp Asn	Glu Trp Ala Asp	Gly Thr Gly Asp
85	90	95	
Leu Gly His Val	Tyr Gly Tyr Gln	Trp Arg Ser Trp	Pro Thr Tyr Asp
100	105	110	
Gly Gly Phe Ile	Asp Gln Ile Ser	Glu Ala Val Asp	Ala Ile Lys His
115	120	125	

Asn Pro Asp Ser Arg Arg Ile Ile Val Ser Ala Trp Asn Val Gly Asp
 130 135 140
 Leu Asp His Met Asn Leu Pro Pro Cys His Ala Phe Phe Gln Phe Tyr
 145 150 155 160
 Val Ala Asn Gly Arg Leu Ser Leu Gln Leu Tyr Gln Arg Ser Ala Asp
 165 170 175
 Ile Phe Leu Gly Val Pro Phe Asn Ile Ala Ser Tyr Ala Leu Leu Leu
 180 185 190
 Gln Met Met Ala Gln Val Thr Gly Leu Gln Ala Gly Asp Phe Ile His
 195 200 205
 Thr Leu Gly Asp Ala His Ile Tyr Leu Asn His Leu Glu Gln Val Lys
 210 215 220
 Leu Gln Leu Ser Arg Glu Pro Arg Pro Leu Pro Gln Met Lys Ile Asn
 225 230 235 240
 Pro Asp Val Lys Asn Ile Phe Asp Phe Gln Phe Glu Asp Phe Glu Leu
 245 250 255
 Val Asn Tyr Asp Pro His Pro His Ile Ala Gly Lys Val Ala Val
 260 265 270

<210> 7461
 <211> 190
 <212> PRT
 <213> B.fragilis

<400> 7461
 Ala Met Gly Gln Glu Asn Met Leu Ile Tyr Leu Gln Val Val Tyr His
 1 5 10 15
 Ser Lys Asp Ser Thr Ile Arg Ile Phe Asp Asn Gly Ser Tyr Lys His
 20 25 30
 Ile Ile Tyr Asn Lys Gln Gly Lys Phe Leu Arg Glu Ile Ser Leu Ala
 35 40 45
 Asp Ser Glu Phe Asn Tyr Leu Leu His Met Gln Ser Asp Thr Tyr Phe
 50 55 60
 Phe Arg Gly Ser Phe Ser Lys Gly Lys Ser Glu Ile Ile Val Thr Asp
 65 70 75 80
 Thr Thr Leu Arg Val Lys Phe Pro Ile Leu Pro Phe Asp Ser Thr Ala
 85 90 95
 Asp Tyr Ile Thr Arg Gly Ala Ile Met Leu Asn Thr Thr Gly Glu Glu
 100 105 110
 Cys Ala Pro Asp Ile Cys Leu Phe Asn His Ile Tyr Ser Asp Ser Val
 115 120 125
 Phe Leu Leu Thr Pro Asp Gly Leu Lys Leu Asp Phe Ile Leu Arg Lys
 130 135 140
 Gly Lys Tyr Ala Pro Ser Leu Glu Asp Val Lys Gln Phe Met Lys Trp
 145 150 155 160
 Asn Gln Tyr Asp Pro Phe Ile Lys Gly Leu Phe Ile Leu Lys Ser Ala
 165 170 175
 Thr Ile Ile Gln Tyr Thr Ile Lys Gly Arg Phe Met Ser Arg
 180 185 190

<210> 7462
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 7462
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met

			20					25					30				
Thr	Trp	Gln	Lys	Tyr	Lys	Leu	Asn	Leu	Arg	Asn	Ser	His	Leu	Leu	Glu		
		35					40					45					
Glu	Phe	Phe	Gln	Ser	Trp	Arg	Asn	Leu	Thr	Pro	Cys	Phe	His	Pro	Leu		
	50					55					60						
Ser	Thr	Gln	His	Trp	Val	Arg	Asp	Ala	Ala	Val	Ser	Ser	Asp	Ile	Ser		
65					70					75					80		
Ser	Ala	Arg															

<210> 7463

<211> 526

<212> PRT

<213> B.fragilis

<400> 7463

Trp	Lys	Leu	Leu	Phe	Phe	Trp	Leu	Trp	Asp	Gly	Val	Val	Gly	Ile	Pro		
1				5					10					15			
Thr	Asp	Val	Phe	Tyr	Leu	Ser	Asn	Ser	Leu	Ser	Phe	Phe	Phe	Ser	Asn		
			20				25						30				
Tyr	Ile	Thr	Ser	Gln	Arg	Ala	Phe	Val	Phe	Pro	Phe	Leu	Met	Lys	Gly		
	35					40						45					
Lys	Ser	Lys	Met	Pro	Val	Leu	Ile	Leu	Leu	Met	Gly	Val	Ile	Phe	Asn		
	50					55					60						
Ile	Leu	Asn	Gly	Leu	Met	Gln	Gly	Glu	Trp	Ile	Phe	Tyr	Leu	Ala	Pro		
65				70					75						80		
Ser	Asp	Tyr	Tyr	Thr	Pro	Gly	Trp	Leu	Leu	Thr	Pro	Cys	Phe	Trp	Ile		
				85					90					95			
Gly	Thr	Leu	Leu	Phe	Phe	Ala	Gly	Met	Gly	Ile	Asn	Trp	His	Ser	Asp		
			100					105					110				
Ser	Val	Ile	Arg	His	Leu	Arg	Ala	Pro	Gly	Asp	Thr	Arg	His	Tyr	Leu		
	115						120					125					
Pro	Gln	Arg	Gly	Met	Tyr	Arg	Tyr	Val	Thr	Ser	Ala	Asn	Tyr	Leu	Gly		
	130					135					140						
Glu	Ile	Val	Glu	Trp	Val	Gly	Trp	Ala	Ile	Leu	Thr	Trp	Ser	Leu	Ser		
145					150					155					160		
Gly	Cys	Ile	Phe	Ala	Trp	Trp	Thr	Val	Ala	Asn	Leu	Val	Pro	Arg	Ala		
			165						170					175			
Asp	Ala	Ile	Trp	His	Arg	Tyr	Arg	Glu	Phe	Gly	Thr	Gln	Arg	Arg			
		180						185					190				
Ile	Glu	Glu	Thr	Asn	Phe	Ser	Phe	Leu	Ile	Leu	Lys	Tyr	Thr	Val	Leu		
	195						200					205					
Met	Asn	Thr	His	Ser	Ala	Ser	Lys	Leu	Phe	Thr	Pro	Val	Thr	Ile	Gly		
	210					215					220						
Pro	Leu	Thr	Leu	Arg	Asn	Arg	Thr	Ile	Arg	Ser	Ala	Ala	Phe	Glu	Gly		
225					230					235					240		
Met	Cys	Pro	Gly	Asn	Ala	Pro	Ser	Pro	Met	Leu	Leu	Asp	Tyr	His	Arg		
				245					250					255			
Ser	Val	Ala	Ala	Gly	Gly	Val	Gly	Met	Thr	Thr	Ile	Ala	Tyr	Ala	Ser		
		260						265					270				
Val	Thr	Arg	Ser	Gly	Leu	Ser	Phe	Pro	Arg	Gln	Leu	Trp	Leu	Arg	Pro		
	275						280						285				
Glu	Ile	Pro	Gly	Leu	Arg	Glu	Val	Thr	Ala	Ala	Ile	His	Ala	Glu			
	290				295					300							
Gly	Ala	Ala	Ala	Ser	Ile	Gln	Ile	Gly	His	Cys	Gly	Asn	Met	Ser	His		
305					310					315					320		
Lys	Ser	Ile	Cys	Gly	Val	Thr	Pro	Ile	Ser	Ala	Ser	Ser	Gly	Phe	Asn		
				325					330					335			
Ile	Asn	Ser	Pro	Thr	Trp	Val	Arg	Gly	Met	Lys	Arg	Glu	Glu	Leu	Pro		

	340		345		350
Glu Met Ala Lys Ala Tyr Gly Arg Ala Val Cys Leu Ala Arg Glu Ala					
	355		360		365
Gly Phe Asp Ala Val Gln Val His Ala Gly His Gly Tyr Leu Ile Ser					
	370		375		380
Gln Phe Leu Ser Pro Tyr Thr Asn His Arg Lys Asp Glu Tyr Gly Gly					
385		390		395	400
Ser Leu Glu Asn Arg Met Arg Phe Met Thr Met Val Met Asn Glu Val					
	405		410		415
Met Lys Ala Ala Gly Lys Asp Leu Ala Val Phe Val Lys Met Asn Met					
	420		425		430
Arg Asp Gly Phe Arg Gly Gly Met Glu Ile Glu Glu Thr Leu Glu Val					
	435		440		445
Ala Arg Arg Leu Glu Ser Leu Gly Ala His Ala Leu Val Leu Ser Gly					
	450		455		460
Gly Phe Val Ser Lys Ala Pro Met Tyr Val Met Arg Gly Ala Met Pro					
465		470		475	480
Ile Lys Thr Leu Thr His Tyr Met Asp Cys Trp Trp Leu Lys Phe Gly					
	485		490		495
Val Lys Leu Ala Gly Arg Met Met Ile Pro Thr Val Pro Phe Lys Glu					
	500		505		510
Ala Tyr Phe Leu Glu Asp Val Ser Glu Val Ser Phe Gly Asn					
	515		520		525

<210> 7464
 <211> 281
 <212> PRT
 <213> B.fragilis

<400> 7464

Leu Ile Leu Lys Ile Arg His Thr Met Lys Lys Leu Phe Ala Ile Val					
1	5	10	15		
Ala Val Met Gly Val Leu Thr Phe Gly Ser Thr Gln Leu Val Gln Ala					
	20	25	30		
Gln Asp Ala Ala Thr Glu Gln Ala Ala Pro Ala Ala Asp Lys Pro					
	35	40	45		
Val Ala Asp Ala Val Ala Glu Ala Ser Ala Pro Leu Ala					
	50	55	60		
Gly Ala Glu Glu Gly Gly Ile His Lys Glu Ile Lys Val Lys Phe Ile					
65	70	75	80		
Glu Gly Thr Ala Ser Phe Met Ser Leu Val Ala Ile Ala Leu Val Ile					
	85	90	95		
Gly Leu Ala Phe Cys Ile Glu Arg Ile Ile Tyr Leu Ser Leu Ala Glu					
	100	105	110		
Ile Asn Thr Lys Lys Phe Met Ser Ser Ile Glu Ala Ala Leu Glu Lys					
	115	120	125		
Gly Asp Val Glu Ala Ala Lys Asp Ile Ala Arg Asn Thr Arg Gly Pro					
	130	135	140		
Val Ala Ser Ile Tyr Tyr Gln Gly Leu Met Arg Ile Asp Gln Gly Ile					
145	150	155	160		
Asp Val Val Glu Lys Ser Val Val Ser Tyr Gly Gly Val Gln Ala Gly					
	165	170	175		
Tyr Leu Glu Lys Gly Cys Ser Trp Ile Thr Leu Phe Ile Ala Met Ala					
	180	185	190		
Pro Ser Leu Gly Phe Leu Gly Thr Val Val Gly Met Val Met Ala Phe					
	195	200	205		
Asp Lys Ile Gln Gln Gln Gly Asp Ile Ser Pro Thr Val Val Ala Gly					
	210	215	220		
Gly Met Lys Val Ala Leu Ile Thr Thr Ile Phe Gly Leu Val Val Ala					

225 230 235 240
 Leu Ile Leu Gln Val Phe Tyr Asn Tyr Ile Leu Ala Lys Ile Glu Ala
 245 250 255
 Leu Thr Ser Glu Met Glu Asp Ser Ser Ile Ser Leu Leu Asp Met Val
 260 265 270
 Ile Lys Tyr Asn Leu Lys Tyr Lys Lys
 275 280

<210> 7465
 <211> 155
 <212> PRT
 <213> B.fragilis

<400> 7465

Leu Met Gly Lys Phe Asn Lys Thr Gly Lys Arg Gly Met Pro Thr Leu
 1 5 10 15
 Asn Thr Ser Ser Leu Pro Asp Leu Ile Phe Thr Leu Leu Phe Phe Phe
 20 25 30
 Met Ile Val Thr Thr Met Arg Glu Val Ser Leu Lys Val Glu Phe Lys
 35 40 45
 Ile Pro Gln Gly Thr Glu Leu Glu Lys Leu Glu Lys Lys Ser Leu Val
 50 55 60
 Thr Phe Ile Tyr Val Gly Lys Pro Thr Ala Glu Phe Arg Lys Lys Leu
 65 70 75 80
 Gly Ser Glu Ser Arg Ile Gln Leu Asn Asp Ala Tyr Ala Glu Val Asp
 85 90 95
 Glu Ile Gln Ala Tyr Val Thr Asn Glu Arg Ser Ser Met Lys Glu Glu
 100 105 110
 Asp Gln Pro Phe Met Thr Val Ser Leu Lys Ile Asp Gln Asp Thr Lys
 115 120 125
 Met Gly Ile Val Thr Asp Ile Lys Gln Ala Leu Arg Gln Ala Tyr Ala
 130 135 140
 Leu Lys Ile Asn Tyr Ser Ala Arg Ala Arg Glu
 145 150 155

<210> 7466
 <211> 239
 <212> PRT
 <213> B.fragilis

<400> 7466

Lys Pro Glu Glu His Gln Phe Leu Tyr Thr Asn Phe Met Glu Val Lys
 1 5 10 15
 Lys Ser Pro Lys Ala Asp Leu Glu Gly Lys Lys Thr Gln Trp Leu Leu
 20 25 30
 Ile Gly Tyr Val Val Val Leu Ala Phe Ile Phe Val Ala Phe Glu Trp
 35 40 45
 Thr Glu Arg Asp Ile Lys Ile Asp Thr Ser Gln Ala Val Ala Gln Ile
 50 55 60
 Glu Phe Glu Glu Glu Met Ile Pro Ile Thr Gln Gln Glu Glu Lys Pro
 65 70 75 80
 Ala Pro Pro Pro Val Glu Val Pro Lys Gln Ala Glu Ile Leu Lys Ile
 85 90 95
 Val Asp Asp Glu Ala Asp Val Gln Glu Thr Ala Ile Ala Ser Thr Glu
 100 105 110
 Asp Thr Gly Gln Lys Val Glu Val Lys Tyr Val Pro Val Glu Val Lys
 115 120 125
 Glu Glu Glu Pro Ser Glu Gln Glu Ile Phe Glu Val Val Glu Asn Ala
 130 135 140

Pro Glu Phe Pro Gly Gly Met Pro Ala Cys Leu Gln Phe Leu Tyr Lys
 145 150 155 160
 Asn Ile Lys Tyr Pro Pro Ile Ala Gln Glu Asn Gly Thr Gln Gly Gln
 165 170 175
 Val Val Leu Gln Phe Val Val Glu Arg Asp Gly Ser Ile Gly Asp Ile
 180 185 190
 Lys Val Val Lys Ser Val Asp Pro Tyr Leu Asp Lys Glu Ala Leu Arg
 195 200 205
 Val Val Lys Thr Met Pro Lys Trp Lys Pro Gly Met Gln Arg Gly Lys
 210 215 220
 Pro Val Arg Cys Arg Phe Thr Leu Pro Val Arg Phe Arg Leu Gln
 225 230 235

<210> 7467

<211> 290

<212> PRT

<213> B.fragilis

<400> 7467

Met Met Glu Arg Lys Leu Ala Val Ile Thr Gly Ala Asp Gly Gly Met
 1 5 10 15
 Gly Thr Glu Ile Thr Arg Ala Val Ala Cys Ala Gly Tyr Asp Val Ile
 20 25 30
 Met Ala Cys Tyr Ser Ser Ser Lys Ala Glu Thr Lys Cys Arg Glu Leu
 35 40 45
 Val Lys Glu Thr Gly Asn Glu Lys Ile Glu Val Trp Gln Ile Asp Leu
 50 55 60
 Ala Ser Leu Ser Ser Val Arg Ala Phe Ala Asp Arg Met Leu Arg Gln
 65 70 75 80
 Lys Thr Pro Val Ala Leu Leu Met Asn Asn Ala Gly Thr Met Glu Thr
 85 90 95
 Gly Leu His Ile Thr Glu Asp Gly Leu Glu Arg Thr Val Ser Val Asn
 100 105 110
 Tyr Val Gly Pro Tyr Leu Leu Thr Arg Leu Leu Leu Pro Leu Met Gly
 115 120 125
 Glu Gly Thr Arg Ile Val Asn Met Val Ser Cys Thr Tyr Ala Ile Gly
 130 135 140
 Lys Leu Asp Phe Pro Asp Phe Phe Leu Arg Gly Arg Lys Gly Ser Phe
 145 150 155 160
 Trp Arg Ile Pro Ile Tyr Ser Asn Thr Lys Leu Ala Leu Leu Leu Phe
 165 170 175
 Thr Ile Glu Leu Ala Glu Arg Leu Arg Ala Arg Gly Ile Thr Val Asn
 180 185 190
 Ala Ala Asp Pro Gly Ile Val Ser Thr Asn Ile Ile Arg Met Asp Gln
 195 200 205
 Trp Phe Asp Pro Leu Thr Asp Ile Phe Phe Arg Pro Phe Ile Arg Thr
 210 215 220
 Pro Leu Gln Gly Ala Ala Thr Ala Ile Gly Leu Leu Leu Asp Ala Glu
 225 230 235 240
 Val Glu Gly Arg Thr Ala Thr Phe Asn Leu Asn Asn His Cys Arg Leu
 245 250 255
 Leu Pro Glu Lys Tyr Thr Arg Pro Asp Arg Arg Ala Gln Leu Trp Glu
 260 265 270
 Glu Thr Glu Arg Ile Leu Ser Glu Lys Gly Phe Leu Pro Ile Asn Asp
 275 280 285
 Lys Arg
 290

<210> 7468

<211> 69
 <212> PRT
 <213> B.fragilis

<400> 7468

Leu	Lys	Thr	Leu	Val	Val	Arg	Ile	Phe	Phe	Val	Ile	Cys	Thr	Arg	Phe
1				5					10					15	
Glu	Glu	Ser	Ala	Asn	Trp	Arg	Asp	Ala	Arg	Val	Val	Glu	Glu	Ala	Arg
			20					25					30		
Leu	Glu	Ser	Val	Tyr	Thr	Pro	Lys	Val	Tyr	Arg	Gly	Phe	Glu	Ser	Arg
		35					40					45			
Ser	Leu	Arg	Arg	Lys	Tyr	Lys	Gln	Glu	Thr	Ile	Ser	Lys	Tyr	Asn	Asn
	50					55					60				
Asn	Asn	Leu	Ile	Asn											
65															

<210> 7469
 <211> 158
 <212> PRT
 <213> B.fragilis

<400> 7469

Ser	Glu	Met	Ser	Lys	Leu	Thr	Tyr	Lys	Val	Ser	Tyr	Tyr	Val	Leu	Tyr
1				5					10					15	
Ala	Met	Phe	Ala	Leu	Ile	Val	Ile	Val	Leu	Gly	Leu	Phe	Tyr	Phe	Gly
			20					25					30		
Gly	Gln	Met	Glu	Thr	Pro	Ile	Val	Tyr	Asp	Met	Asp	Asn	Pro	Ala	Asn
		35					40					45			
Thr	Asp	Ala	Leu	Leu	Tyr	Leu	Met	Tyr	Gly	Leu	Phe	Gly	Ile	Ala	Val
	50					55					60				
Val	Ala	Thr	Val	Val	Ala	Ala	Ile	Phe	Gln	Phe	Gly	Ser	Ala	Leu	Lys
65					70					75				80	
Asp	Asn	Pro	Lys	Gly	Ala	Ile	Arg	Ser	Leu	Leu	Gly	Leu	Ile	Leu	Leu
			85					90					95		
Val	Leu	Val	Leu	Val	Val	Ala	Trp	Ser	Met	Gly	Ser	Gly	Glu	Thr	Leu
			100					105					110		
Thr	Ile	Gln	Gly	Tyr	Glu	Gly	Thr	Asp	Asn	Val	Pro	Phe	Trp	Leu	Lys
		115				120						125			
Leu	Thr	Asp	Met	Phe	Leu	Tyr	Ser	Ile	Tyr	Phe	Leu	Met	Leu	Val	Thr
	130					135					140				
Val	Leu	Ala	Ile	Ile	Gly	Ser	Ser	Ile	Lys	Lys	Lys	Leu	Ser		
145					150					155					

<210> 7470
 <211> 244
 <212> PRT
 <213> B.fragilis

<400> 7470

Cys	Thr	Ala	Arg	Cys	Asn	Ile	Glu	Met	Pro	Tyr	Arg	Arg	Leu	Pro	Asn
1				5					10					15	
Thr	Asp	Gln	Ala	Arg	Ile	Arg	Ala	Leu	Lys	Thr	Ala	Val	Val	Lys	Gly
			20					25					30		
Asp	Met	Cys	Asp	Val	Tyr	Asp	Leu	Pro	Val	Ser	Leu	Lys	Thr	Leu	Gly
		35					40					45			
Glu	Ala	Arg	Ile	Phe	Leu	Ser	Lys	Phe	Glu	Thr	Ala	His	Ser	Tyr	Tyr
	50					55					60				
Val	His	Cys	Tyr	Gly	Glu	Gln	Ser	Arg	Asn	Ser	Lys	Lys	His	Gln	Ala
65					70					75				80	

Asn	Val	Lys	Thr	Ala	Arg	Leu	Tyr	Ile	Ser	His	Phe	Ile	Gln	Val	Leu
				85					90				95		
Asn	Leu	Ala	Val	Ile	Arg	Met	Glu	Ile	Lys	Glu	Ser	His	Lys	Ala	Leu
		100						105					110		
Tyr	Gly	Leu	Pro	Val	Asp	Asn	Phe	Ser	Val	Pro	Asp	Leu	Ser	Ser	Glu
	115						120					125			
Ala	Ser	Leu	Ala	Glu	Trp	Gly	Gln	Lys	Ile	Ile	Glu	Gly	Glu	Arg	Lys
	130					135					140				
Arg	Thr	Ser	Gln	Gly	Gly	Ile	Pro	Ile	Tyr	Asn	Pro	Thr	Ile	Ala	Lys
145					150					155					160
Val	Lys	Val	His	Tyr	Asp	Ile	Phe	Met	Glu	Gly	Tyr	Glu	Lys	Gln	Lys
				165					170					175	
Ser	Leu	Gln	Ser	Leu	Thr	Asn	Arg	Ser	Leu	Glu	Gln	Leu	Ala	Ser	Met
			180					185					190		
Arg	Val	Gln	Ala	Asp	Arg	Leu	Ile	Leu	Asp	Ile	Trp	Asn	Gln	Val	Glu
		195					200					205			
Ala	Lys	Phe	Gln	Asp	Val	Ser	Pro	Asn	Glu	Lys	Arg	Leu	Glu	Lys	Cys
	210					215					220				
Arg	Asp	Tyr	Gly	Leu	Ile	Tyr	Tyr	Tyr	Arg	Thr	Gly	Glu	Lys	Gln	Asn
225					230					235					240
Lys	Glu	Ile	Leu												

<210> 7471

<211> 347

<212> PRT

<213> B.fragilis

<400> 7471

Tyr	Lys	Lys	Arg	Gly	Cys	Arg	Pro	Ser	Ser	Leu	Phe	Ser	Phe	Asn	Leu
1				5					10					15	
Ser	Phe	Tyr	Asn	Leu	Phe	Ile	Met	Tyr	Thr	Ala	Phe	Gln	Leu	Leu	Asp
			20					25				30			
Lys	Ile	Asn	Ser	His	Ile	Ser	Asp	Ile	Arg	Phe	Thr	Arg	Thr	Pro	Ala
		35					40					45			
Gly	Leu	Tyr	Asp	Pro	Ile	Lys	Tyr	Val	Leu	Ser	Met	Gly	Gly	Lys	Arg
	50					55					60				
Ile	Arg	Pro	Val	Leu	Met	Leu	Met	Ala	Tyr	Asn	Leu	Tyr	Lys	Glu	Asp
65					70					75					80
Val	Ser	Ser	Ile	Tyr	Asp	Pro	Ala	Thr	Ala	Ile	Glu	Val	Tyr	His	Asn
				85					90					95	
Tyr	Thr	Leu	Leu	His	Asp	Asp	Leu	Met	Asp	Arg	Ala	Asp	Met	Arg	Arg
			100					105					110		
Gly	Lys	Thr	Thr	Val	His	Lys	Val	Trp	Asn	Asp	Asn	Thr	Ala	Ile	Leu
		115					120					125			
Ser	Gly	Asp	Ala	Met	Leu	Val	Leu	Ala	Tyr	Gln	Tyr	Met	Ala	Ala	Ser
	130					135					140				
Ser	Ser	Glu	His	Leu	Lys	Glu	Val	Met	Asp	Leu	Phe	Ser	Leu	Thr	Ala
145					150					155					160
Leu	Glu	Ile	Cys	Glu	Gly	Gln	Gln	Met	Asp	Met	Asn	Phe	Glu	Ser	Arg
			165						170					175	
Glu	Asp	Val	Lys	Glu	Glu	Glu	Tyr	Leu	Glu	Met	Ile	Arg	Leu	Lys	Thr
		180						185					190		
Ala	Val	Leu	Ala	Ala	Ser	Leu	Lys	Ile	Gly	Ala	Ile	Leu	Gly	Gly	
	195						200					205			
Ala	Ser	Pro	Glu	Asp	Ala	Glu	Asn	Leu	Tyr	Asp	Phe	Gly	Met	Gln	Ile
	210					215					220				
Gly	Val	Ala	Phe	Gln	Leu	Gln	Asp	Asp	Leu	Leu	Asp	Val	Tyr	Gly	Asp
225					230					235					240

Pro Ala Val Phe Gly Lys Asn Ile Gly Gly Asp Ile Leu Cys Asn Lys
 245 250 255
 Lys Thr Tyr Met Leu Ile Lys Ala Leu Glu Arg Ala Asp Arg Asp Gln
 260 265 270
 Leu Glu Gly Leu Asn His Trp Leu Ser Thr Thr Ser Phe Cys Pro Glu
 275 280 285
 Glu Lys Ile Ser Ala Val Thr Glu Leu Tyr Thr Gln Ile Gly Ile Lys
 290 295 300
 Ala Val Cys Glu Asn Lys Met Arg Glu Tyr Tyr Thr Arg Ala Met Thr
 305 310 315 320
 Ser Leu Gly Ala Val Ser Val Ile Glu Asp Lys Lys Ser Glu Leu Lys
 325 330 335
 Lys Leu Met Lys His Leu Met Tyr Arg Glu Met
 340 345

<210> 7472

<211> 457

<212> PRT

<213> B.fragilis

<400> 7472

Lys Ile Asp Gly Arg Ser Asp Pro Arg Glu Thr Asn Lys Glu Tyr Leu
 1 5 10 15
 Ile Tyr Lys Leu Ser Glu Ala Met Lys Asp Cys Thr Arg Ile Asp Asn
 20 25 30
 Glu Leu Phe Pro Lys Phe Asp Val Lys Arg Gly Leu Arg Asn Glu Asp
 35 40 45
 Gly Thr Gly Val Leu Val Gly Leu Thr Lys Ile Gly Asn Val Val Gly
 50 55 60
 Tyr Glu Arg Ile Pro Gly Gly Gly Leu Lys Pro Ile Pro Gly Lys Leu
 65 70 75 80
 Phe Tyr Arg Gly Tyr Asp Leu Glu Asp Leu Ala His Ala Ile Leu Lys
 85 90 95
 Glu Lys Arg Phe Gly Phe Glu Glu Val Ala Tyr Leu Leu Leu Ser Gly
 100 105 110
 Ser Leu Pro Asp Lys Glu Glu Leu Ala Ser Phe Arg Glu Leu Ile Asn
 115 120 125
 Asp Asn Met Pro Leu Glu Gln Lys Thr Lys Met Asn Ile Ile Glu Leu
 130 135 140
 Glu Gly Asn Asn Ile Met Asn Ile Leu Ala Arg Ser Val Leu Glu Met
 145 150 155 160
 Tyr Arg Phe Asp Pro Asn Pro Asp Asp Thr Ser Arg Asp Asn Leu Met
 165 170 175
 Arg Gln Ser Ile Asp Leu Ile Ser Lys Phe Pro Thr Ile Ile Ala Tyr
 180 185 190
 Ala Phe Asn Met Leu Arg His Ala Thr Phe Gly Arg Ser Leu His Ile
 195 200 205
 Arg His Pro Gln Glu Asn Leu Ser Ile Ala Glu Asn Phe Leu Tyr Met
 210 215 220
 Leu Lys Arg Asp Tyr Thr Glu Leu Asp Ala Arg Thr Leu Asp Leu Leu
 225 230 235 240
 Leu Val Leu Gln Ala Glu His Gly Gly Gly Asn Asn Ser Thr Phe Thr
 245 250 255
 Val Arg Val Thr Ser Ser Thr Gly Thr Asp Thr Tyr Ser Ala Ile Ala
 260 265 270
 Ala Gly Ile Gly Ser Leu Lys Gly Pro Leu His Gly Gly Ala Asn Ile
 275 280 285
 Gln Val Ala Asp Met Phe His His Leu Gln Glu Asn Ile Gln Asp Trp
 290 295 300

Thr Asn Val Asp Glu Ile Asp Thr Tyr Phe Thr Arg Met Leu Asn Lys
 305 310 315 320
 Glu Val Tyr Asn Lys Thr Gly Leu Ile Tyr Gly Ile Gly His Ala Val
 325 330 335
 Tyr Thr Ile Ser Asp Pro Arg Ala Val Leu Leu Lys Glu Leu Ala Arg
 340 345 350
 Asp Leu Ala His Glu Lys Gly Arg Glu Arg Glu Phe Ala Phe Leu Glu
 355 360 365
 Leu Leu Glu Glu Arg Ala Ile Ala Thr Phe Gly Lys Ile Lys Asn Asn
 370 375 380
 Gly Lys Thr Val Ser Ser Asn Val Asp Phe Tyr Ser Gly Phe Val Tyr
 385 390 395 400
 Glu Met Ile Gly Leu Pro Gln Glu Ile Tyr Thr Pro Leu Phe Ala Met
 405 410 415
 Ala Arg Ile Val Gly Trp Cys Ala His Arg Asn Glu Glu Leu Asn Phe
 420 425 430
 Glu Gly Lys Arg Ile Ile Arg Pro Ala Tyr Lys Asn Val Leu Glu Glu
 435 440 445
 Glu Gln Tyr Val Pro Leu Lys Lys Arg
 450 455

<210> 7473
 <211> 160
 <212> PRT
 <213> B.fragilis

<400> 7473
 Phe Lys Met Gly His His Gln Leu Asp Thr Leu Asp Glu Gln Ile Leu
 1 5 10 15
 Lys Leu Ile Ala Asp Asn Ala Arg Ile Pro Phe Leu Glu Val Ala Arg
 20 25 30
 Ala Cys Asn Val Ser Gly Ala Ala Ile His Gln Arg Ile Gln Lys Leu
 35 40 45
 Thr Asn Leu Gly Ile Leu Lys Gly Ser Glu Tyr Val Ile Asp Pro Glu
 50 55 60
 Lys Ile Gly Tyr Glu Thr Cys Ala Tyr Ile Gly Ile Tyr Leu Lys Asp
 65 70 75 80
 Pro Glu Ser Phe Asp Ser Val Thr Lys Ala Leu Glu Ala Ile Pro Glu
 85 90 95
 Val Val Glu Cys His Phe Thr Thr Gly Lys Tyr Asp Met Phe Ile Lys
 100 105 110
 Ile Tyr Ala Arg Asn Asn His His Leu Leu Ser Val Ile His Asp Lys
 115 120 125
 Leu Gln Pro Leu Gly Leu Ala Arg Thr Glu Thr Leu Ile Ser Phe His
 130 135 140
 Glu Ala Ile Lys Arg Gln Met Pro Ile Met Val Asp Thr Asp Glu Asp
 145 150 155 160

<210> 7474
 <211> 317
 <212> PRT
 <213> B.fragilis

<400> 7474
 Gly Val Ala Ile Leu Lys Lys Gly Cys Ser His Pro Val Ser Met Ala
 1 5 10 15
 Thr Pro Phe Leu Asn His Thr Phe Val Ile Ile Met Val Lys Val Glu
 20 25 30
 Ile Asp Glu Gly Ser Gly Phe Cys Phe Gly Val Val Thr Ala Ile His

35 40 45
 Lys Ala Glu Glu Glu Leu Ala Lys Gly Val Thr Leu Tyr Cys Leu Gly
 50 55 60
 Asp Ile Val His Asn Ser Arg Glu Val Glu Arg Leu Lys Glu Met Gly
 65 70 75 80
 Leu Ile Thr Ile Asn His Glu Glu Phe Lys Gln Leu His Asn Ala Lys
 85 90 95
 Val Leu Leu Arg Ala His Gly Glu Pro Pro Glu Thr Tyr Ile Ile Ala
 100 105 110
 Lys Glu Asn Asn Ile Glu Ile Ile Asp Ala Thr Cys Pro Val Val Leu
 115 120 125
 Arg Leu Gln Lys Arg Ile Lys Gln Glu Tyr Met Gln Glu Asp Leu Asp
 130 135 140
 Glu Lys Gln Ile Val Ile Tyr Gly Lys Asn Gly His Ala Glu Val Leu
 145 150 155 160
 Gly Leu Val Gly Gln Thr Thr Gly Lys Ala Ile Val Ile Glu Lys Leu
 165 170 175
 Asp Glu Ala Arg Arg Leu Asp Phe Ser Lys Ser Ile Arg Leu Tyr Ser
 180 185 190
 Gln Thr Thr Lys Ser Leu Asp Glu Phe Trp Glu Ile Val Glu Tyr Ile
 195 200 205
 Lys Glu His Ile Ser Pro Asp Val Thr Phe Glu Tyr Tyr Asp Thr Ile
 210 215 220
 Cys Arg Gln Val Ala Asn Arg Met Pro Asn Leu Arg Lys Phe Ala Ala
 225 230 235 240
 Ser His Asp Leu Ile Phe Phe Val Ser Gly Lys Lys Ser Ser Asn Gly
 245 250 255
 Lys Met Leu Phe Glu Glu Cys Lys Lys Val Asn Pro Asn Ser His Leu
 260 265 270
 Ile Asp Ser Ala Asp Glu Ile Asp Asp Ser Leu Leu Pro Gly Val Asn
 275 280 285
 Ser Ile Gly Val Cys Gly Ala Thr Ser Thr Pro Lys Trp Leu Met Glu
 290 295 300
 Glu Ile Ser Glu Ala Ile Lys Ala Gln Ile Lys Arg Gln
 305 310 315

<210> 7475

<211> 278

<212> PRT

<213> B.fragilis

<400> 7475

Tyr Ile Lys Ile Gly Val Leu Leu Val Phe Lys Leu Leu Leu Leu Leu
 1 5 10 15
 Trp His Lys Tyr Asn Ala Asp Ile Leu Lys Ile Gln Tyr Ile Trp Arg
 20 25 30
 Lys Asn Leu Asp Asn Thr Leu Lys Lys Gly Val Asn Leu Leu His Asn
 35 40 45
 Ile Met Lys Lys Ile Thr Ile Ala Ile Asp Gly Phe Ser Ser Cys Gly
 50 55 60
 Lys Ser Thr Met Ala Lys Asp Leu Ala Lys Glu Ile Gly Tyr Ile Tyr
 65 70 75 80
 Ile Asp Ser Gly Ala Met Tyr Arg Ala Val Thr Leu Tyr Ser Ile Glu
 85 90 95
 Asn Gly Ile Phe His Gly Asp Thr Ile Asp Thr Asp Glu Leu Lys Arg
 100 105 110
 Arg Ile Gly Asp Ile His Ile Ser Phe Arg Ile Asp Pro Glu Thr Gly
 115 120 125
 Arg Pro Asn Thr Tyr Leu Asn Gly Val Asn Val Glu Asn Lys Ile Arg

130	Thr Met Glu Val Ser	135	Ser Lys Val Ser Pro Ile	140	Ser Ala Leu Gly Phe
145	Val Arg Glu Ala Met	150	Val Ala Gln Gln Gln	155	Met Gly Lys Ala Lys
	165		170		175
Gly Ile Val Met Asp	Gly Arg Asp	Ile Gly Thr Thr	Val Phe Pro Asp		
180	185	190			
Ala Glu Leu Lys Ile Phe	Val Thr Ala Ser	Ala Glu Ile Arg	Ala Gln		
195	200	205			
Arg Arg Tyr Asp Glu	Leu Lys Ala Lys	Gly Gln Glu Thr	Gly Phe Glu		
210	215	220			
Glu Ile Leu Glu Asn Val	Lys Gln Arg Asp	His Ile Asp Gln	Thr Arg		
225	230	235	240		
Glu Val Ser Pro Leu	Lys Lys Ala Asp	Asp Ala Leu Leu	Leu Asp Asn		
	245	250	255		
Ser His Leu Thr Ile	Ala Glu Gln Lys	Glu Trp Leu Met	Ala Glu Tyr		
260	265	270			
Gln Lys Ala Ile Lys	Ala				
275					

<210> 7476

<211> 331

<212> PRT

<213> B.fragilis

<400> 7476

Lys Asn Met Ile Val	Met Gly Thr Val	Lys Cys Val Gly	Ile Leu Thr
1	5	10	15
Ser Gly Gly Asp Ala	Pro Gly Met Asn	Ala Ala Ile Arg	Ala Val Thr
20	25	30	
Arg Ala Ala Ile Tyr	Asn Gly Leu Gln	Val Lys Gly Ile	Tyr Arg Gly
35	40	45	
Tyr Arg Gly Leu Val	Thr Gly Glu Ile	Lys Glu Phe Lys	Ser Gln Asn
50	55	60	
Val Ser Asn Ile Ile	Gln Leu Gly Gly	Thr Ile Leu Lys	Thr Ala Arg
65	70	75	80
Cys Lys Glu Phe Thr	Pro Glu Gly Arg	Lys Met Ala Tyr	Asp Asn
85	90	95	
Met Val Lys Glu Gly	Ile Asp Ala Leu	Val Val Ile Gly	Gly Asp Gly
100	105	110	
Ser Leu Thr Gly Ala	Arg Ile Phe Ala	Gln Glu Tyr Asp	Ile Pro Cys
115	120	125	
Ile Gly Leu Pro Gly	Thr Ile Asp Asn	Asp Leu Tyr Gly	Thr Asp Thr
130	135	140	
Thr Ile Gly Tyr Asp	Thr Ala Leu Asn	Thr Ile Leu Asp	Ala Val Asp
145	150	155	160
Lys Ile Arg Asp Thr	Ala Thr Ser His	Glu Arg Leu Phe	Phe Val Glu
165	170	175	
Val Met Gly Arg Asp	Ala Gly Phe Leu	Ala Leu Asn Gly	Ala Ile Ala
180	185	190	
Ser Gly Ala Glu Ala	Ala Ile Ile Pro	Glu Phe Ser Thr	Glu Val Asp
195	200	205	
Gln Leu Glu Glu Phe	Ile Lys Ser Gly	Phe Arg Lys Ser	Lys Asn Ser
210	215	220	
Ser Ile Val Leu Val	Ala Glu Ser Glu	Leu Thr Gly Gly	Ala Met His
225	230	235	240
Tyr Ala Glu Arg Val	Lys Asn Glu Tyr	Pro Gln Tyr Asp	Val Arg Val
245	250	255	
Thr Ile Leu Gly His	Leu Gln Arg Gly	Gly Ser Pro Thr	Ala His Asp

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<210> 7477
<211> 259
<212> PRT
<213> B.fragilis
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[illegible]

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<210> 7478
<211> 61
<212> PRT
<213> B.fragilis
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Ser Tyr Val Phe Ile Gly Thr Ile Leu Phe Val Glu Pro Cys Ile Tyr
1 5 10 15

Arg Ile Ile Ser Phe Val Gly Phe Ile Gln Ser Cys Val Tyr Asn Ile
 20 25 30
 Cys Met Asp Ser Glu Glu Glu Arg Phe Thr Val Leu Gly Ala Ile Gly
 35 40 45
 Leu Arg Arg Gly Gly Leu Leu Pro Gly Gly Gly Leu Lys
 50 55 60

<210> 7479
 <211> 213
 <212> PRT
 <213> B.fragilis

<400> 7479
 Arg Ile Ala Ser Thr Trp Trp Leu Trp Pro Val Phe Arg Gln Thr Val
 1 5 10 15
 Gly Ser Ala Leu Pro Asn Arg Glu His Gly Ser Thr Arg Pro Ser Gly
 20 25 30
 Ser His Phe Asp Thr Phe Tyr Ser Asp Arg Tyr Leu Thr Thr Ser Arg
 35 40 45
 Val Lys Ala Ile Asn Asp Ala Leu Ala Gly Ile Pro Tyr Glu His Ile
 50 55 60
 Ile Ile Leu Ala Asn Thr Glu Gln Tyr Gly Gly Gly Ile Tyr Asn
 65 70 75 80
 Ala Phe Thr Leu Thr Thr Ala His His Pro Asn Phe Arg Pro Val Val
 85 90 95
 Val His Glu Phe Gly His Ser Phe Gly Gly Leu Ala Asp Glu Tyr Phe
 100 105 110
 Tyr Asp Glu Asp Val Met Asn Gly Leu Tyr Pro Leu Asn Ile Glu Pro
 115 120 125
 Trp Glu Gln Asn Ile Thr Thr Arg Ile Asn Phe Ala Ser Lys Trp Glu
 130 135 140
 Asp Met Leu Thr Lys Ala Thr Pro Val Pro Thr Pro Val Ala Asn Lys
 145 150 155 160
 Ala Lys Tyr Pro Ile Gly Val Tyr Glu Gly Gly Gly Tyr Ser Ala Lys
 165 170 175
 Gly Ile Tyr Arg Pro Ala Phe Asp Cys Arg Met Arg Thr Asn Glu Tyr
 180 185 190
 Pro Thr Phe Cys Pro Val Cys Gln Arg Ala Ile Gln Arg Ile Ile Glu
 195 200 205
 Phe Tyr Thr Gly Lys
 210

<210> 7480
 <211> 350
 <212> PRT
 <213> B.fragilis

<400> 7480
 Ile Arg Leu Ser Leu Lys Leu Ser Ser Ser Ile Met Ser Asp Ser Ile
 1 5 10 15
 Lys Thr Phe Lys Thr Gly Tyr Ile Leu Leu Pro Val Leu Ile Gly Leu
 20 25 30
 Ser Val Val Gly Trp Leu Phe Tyr Trp Glu Phe Asn Pro Glu Leu Phe
 35 40 45
 Ser Gly Ile Arg Phe Ser Trp Arg Leu Val Gly Gly Leu Leu Leu Ala
 50 55 60
 Val Leu Phe Met Phe Gly Arg Asp Gly Gly Leu Met Trp Arg Phe Arg
 65 70 75 80
 Phe Ile Thr Asp Arg Glu Leu Thr Trp Arg Gln Ala Phe Arg Val Asn

[illegible]

<400> 7481

Arg	Lys	Glu	Ser	Tyr	Leu	Cys	Asp	Arg	Ser	Ile	Phe	Leu	Ser	Ile	Glu
1				5					10					15	
Phe	Met	Lys	Arg	Arg	Leu	Ile	Gln	Phe	Val	Thr	Thr	Tyr	Phe	Leu	Phe
			20					25					30		
Val	Leu	Ile	Phe	Val	Leu	Gln	Lys	Pro	Ile	Phe	Met	Gly	Tyr	Tyr	His
		35					40					45			
Thr	Leu	Tyr	Asn	Lys	Val	Ser	Trp	Thr	Asp	Tyr	Phe	Ser	Val	Met	Gly
	50					55					60				
His	Gly	Leu	Pro	Leu	Asp	Phe	Ser	Leu	Ala	Gly	Tyr	Leu	Thr	Ala	Ile
65				70						75				80	
Pro	Gly	Leu	Leu	Leu	Ile	Ala	Ser	Val	Trp	Ile	Gln	Pro	Ala	Val	Ile
			85						90					95	
Arg	Gln	Ile	Arg	Arg	Gly	Tyr	Phe	Met	Ile	Ile	Ala	Ile	Leu	Leu	Ser
			100					105					110		
Cys	Ile	Phe	Ile	Gly	Asp	Leu	Asp	Cys	Met	Asn	Thr	Glu	Asp	Ser	Ala
		115					120					125			
Trp	Met	Pro	Leu	Arg	Cys	Ser	Thr	Ser	Ser	Pro	Arg	Pro	Lys	Met	Leu
	130					135					140				
Trp	Pro	Val	Ser	Ala	Phe	Gly	Ser								

145

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<210> 7482
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 7482

Ala	Arg	Arg	Ser	Pro	Tyr	Asn	Arg	Gln	Glu	Ser	Val	Tyr	Ile	Cys	Met
1				5					10					15	
Phe	Asp	Val	Leu	Tyr	Ile	Gly	Gln	Glu	Thr	Met	Ala	Gly	Asp	Gln	Gln
		20					25					30			
Thr	Leu	Lys	Pro	Asp	Thr	Thr	Leu	Val	Arg	Ser	Cys	Thr	Asp	Cys	Ser
		35				40					45				
Phe	Pro	Asn	Ser	Ser	Phe	Ser	Asn	His	Tyr	Thr	Asn	Leu	Gln		
	50					55					60				

<210> 7483
 <211> 705
 <212> PRT
 <213> B.fragilis

<400> 7483

Gln	Ser	Ile	Pro	Thr	Gly	Thr	Val	Tyr	Met	Thr	Met	Met	Lys	Gln	Ser
1				5				10					15		
Tyr	Leu	Asn	Ser	Gly	Tyr	Leu	Thr	Gln	Leu	Ile	Met	Lys	Lys	Arg	Ile
		20					25				30				
Gln	Ile	Leu	Ile	Ile	Val	Ile	Leu	Tyr	Ala	Leu	Met	Phe	Val	Pro	Leu
		35				40				45					
Ser	Ala	Gln	Thr	Pro	His	Thr	Ile	Ser	Gly	Ile	Val	Lys	Asp	Arg	Ala
	50				55				60						
Ser	Val	Pro	Ile	Ser	Gly	Val	Asn	Ile	Arg	Val	Glu	Gly	Gln	Lys	Trp
65				70				75						80	
Lys	Ala	Ser	Thr	Gly	Lys	Glu	Gly	Lys	Phe	Thr	Leu	Glu	Ile	Pro	Gln
			85					90					95		
Asn	Ser	Thr	Ile	Thr	Phe	Ser	Ser	Val	Gly	Tyr	Glu	Pro	Val	Thr	Ile
		100						105					110		
His	Ser	Gly	Glu	Lys	Lys	Trp	Ile	Glu	Ile	Thr	Leu	Lys	Glu	Ser	Gln
		115				120					125				
Ser	Leu	Leu	Pro	Glu	Ile	Thr	Val	Thr	Ser	Thr	Leu	Lys	Asn	Ser	Met
	130				135					140					
Lys	Phe	Val	Phe	Ala	Pro	Ser	Asp	Leu	Glu	Leu	Ile	Lys	Asp	Met	Leu
145				150					155					160	
Tyr	Leu	Lys	Thr	Arg	Tyr	Lys	Ile	Pro	Ser	Lys	Arg	Phe	Gln	Ser	Asp
			165					170					175		
Ser	Arg	Val	Ile	Ile	Gln	Pro	Ile	Leu	Ser	Asn	Asn	Ser	Arg	Gly	Thr
		180					185						190		
Gln	Lys	Asn	Phe	Ser	Pro	Ile	Val	Tyr	Asp	Gly	Lys	Asn	Tyr	Asp	Ile
	195					200						205			
Leu	Leu	Arg	Arg	Gly	Asn	Val	Cys	Gly	Asp	Arg	Ala	Glu	Lys	Glu	Tyr
	210				215						220				
Tyr	Ser	Arg	Phe	Ala	Gln	Val	Ile	Asp	Pro	Asp	Ser	Ile	Cys	Asn	Gln
225				230					235					240	
Thr	Leu	Thr	Tyr	Ala	Asp	Ser	Cys	Thr	Val	Asp	Asp	Ile	Asn	Asp	Leu
			245					250					255		
Tyr	Thr	Thr	Glu	Val	Arg	Ile	Lys	Ile	Ser	Thr	Phe	Cys	Gln	Asp	Glu
		260					265						270		
Tyr	Arg	Asp	Thr	Ile	Arg	Ile	Thr	Asn	Gly	Ile	Ile	Tyr	Pro	Met	Arg
		275					280					285			

Phe Phe Asn Tyr Asn Leu Ser Ala Met Asp Leu Asp Asn Ser Tyr Ile
 290 295 300
 Pro Lys Gln Thr Pro Leu Asn Phe Asn Glu Lys Gly Glu Met His Leu
 305 310 315 320
 Arg Phe Arg Pro Glu Asp Ala Asn Ile Tyr Glu Asn Glu Gly Lys Asn
 325 330 335
 Ala Glu Glu Leu Arg Lys Met Lys Lys Ala Leu Asp Asp Ile Asp Lys
 340 345 350
 Asp Arg Thr Lys Thr Leu Thr Thr Phe Gln Ile Ile Gly Tyr Thr Ser
 355 360 365
 Pro Glu Gly Thr Tyr Glu Tyr Asn Leu Lys Leu Ala Lys Lys Arg Met
 370 375 380
 Lys Asn Ala Glu Gly Lys Val Phe Glu Asn Ile Ser Glu Glu Thr Ile
 385 390 395 400
 Arg Lys Ala Lys Val Asp Asn Asp Ala Val Val Glu Ser Trp Thr Thr
 405 410 415
 Val Cys Glu Leu Met Glu Lys Asp Ser Ile Gln Glu Val Ser Gln Leu
 420 425 430
 Lys Glu Leu Ile Lys Arg Ala Arg Gly Asn His Asn Glu Ile Ser Trp
 435 440 445
 Gly Ala Arg Arg Met Lys Ile Tyr Pro Leu Ile Arg Asp Arg Tyr Leu
 450 455 460
 Pro Arg Leu Arg Arg Val Glu Tyr Phe Tyr Glu Tyr Ser Glu Leu Arg
 465 470 475 480
 Thr Leu Asn Lys Asp Glu Ile Asp Ala Leu Tyr Lys Lys Asp Pro Gln
 485 490 495
 Lys Leu Thr Ala Ser Glu Phe Trp Ser Tyr Ile Met Ser Gln Lys Asp
 500 505 510
 Ala Thr Asp Glu Lys Arg Glu Ala Leu Tyr Arg Glu Ala Leu Ser Ile
 515 520 525
 His Pro Asp Leu Met Ile Ala Ala Asn Asn Leu Ala Ser Leu Leu Ile
 530 535 540
 Lys Gln Asn Arg Ala Asp Thr Thr Leu Leu Lys Pro Phe Ile Thr Gln
 545 550 555 560
 Asp Ala Pro Ser Ala Ile Leu Val Asn Gln Thr Val Ala Tyr Leu Gln
 565 570 575
 Lys Arg Asp Phe Lys Arg Ala Asn His Phe Ala Glu Leu Leu Pro Asp
 580 585 590
 Asn Lys Asp Thr Glu Ile Val Lys Ala Leu Ala Ala Met Asp Gly
 595 600 605
 Lys Tyr Gln Glu Ala Tyr Pro Ile Phe Glu Lys Gln Gly Gly Ile Asn
 610 615 620
 Gln Ala Ile Leu Leu Leu Ser Met Lys Gln Asn Ser Lys Ala Trp Glu
 625 630 635 640
 Val Leu Lys Lys Val Glu Asp Thr Ser Pro Asp Thr Glu Tyr Val Lys
 645 650 655
 Ala Ile Ala Ala Asn Arg Leu Asn Asn Val Asn Glu Ala Val Ile His
 660 665 670
 Leu Arg Asn Ala Ile Thr Gln Lys Pro Ser Leu Lys Glu Ile Ala Gln
 675 680 685
 Lys Asp Gly Asp Val Leu Asp Leu Leu Asp Leu Leu Asp Leu Asp Lys
 690 695 700
 Lys
 705

<210> 7484

<211> 378

<212> PRT

<213> B.fragilis

<400> 7484

Ser Met Lys Pro His Thr Leu Phe Leu Thr Leu Gly Ile Leu Leu Leu
 1 5 10 15
 Gly Phe Ser Ala Cys Glu Pro Leu Asn Glu Thr Pro Glu Thr Pro Ala
 20 25 30
 Phe Ser Leu Asn Leu Thr Ser Pro Asp Gly Glu Pro Ser Thr Asp Asn
 35 40 45
 Asp Asn Ala Val Leu Gln Lys Leu Val Tyr His Leu Phe Ile Phe Arg
 50 55 60
 Ser Asn Thr Ala Asn Pro Ser Pro Asp Asn Asp Gly Ser Asn Tyr Thr
 65 70 75 80
 Phe Trp Arg His Thr Gly Asp Leu Thr Leu Lys Gln Ile Arg Glu Tyr
 85 90 95
 Thr Leu Ser Ile Pro Ser Glu Ser Thr Asp Arg Ser Tyr Leu Leu Leu
 100 105 110
 Val His Ala Thr Pro Lys Glu Lys Pro Glu Ser Glu Ile Ile Ser Lys
 115 120 125
 Glu Gly Met Thr Phe Ser Glu Ser Glu Ile Ser Met Ile Lys Glu Asn
 130 135 140
 Asp Asn Asn Tyr Val Pro Leu Ser Lys Asp Asn Tyr Tyr Ala Ile Gln
 145 150 155 160
 Gln Leu Thr Pro Glu Asp Ile Ala Gln Gly Lys Thr Ser Ile Glu Phe
 165 170 175
 Lys Leu Lys Arg Ala Val Gly Glu Leu Val Phe Asp Val Met Lys Cys
 180 185 190
 Asp Glu Lys Ser His Asn Pro Ile Asp Ile Asp Thr Glu Cys Ser Ser
 195 200 205
 Thr Leu Asp Arg Val Phe Arg Ile Asp Ile Glu Ile Asn Gly Val Ile
 210 215 220
 Pro Lys Val Ser Leu Thr Asn Glu Thr Lys Asn Pro Glu Arg Ile Asn
 225 230 235 240
 Ile Cys Phe Ser Lys Glu Ile Val Leu Lys Ser Asp Tyr Thr Pro Asp
 245 250 255
 Phe Ala Asn Asn Thr Glu Val Ile Glu Pro Leu Thr Asn Ala Pro Leu
 260 265 270
 Asp Thr Asn Glu Lys Ala Val Lys Gly Ala Thr Arg Ile Cys Gly Pro
 275 280 285
 Tyr Leu Phe Ser Lys Met Thr Leu Asp His Pro Asp Glu Glu Ala Thr
 290 295 300
 Asp Pro Glu Glu Gly Ile Lys Thr Ile Leu Asn Phe Ser Tyr Tyr Asp
 305 310 315 320
 Thr Thr Pro Leu Pro Asn Gly Ser Tyr Ser Thr Lys Lys Leu Ile Leu
 325 330 335
 Ser Leu Thr Asp Lys Pro Leu Thr Ile Val Lys Asp His Tyr Thr Val
 340 345 350
 Thr Asn Ile Arg Leu Arg Asn Asn Arg Ile Ile Asp Leu Ser Val Ser
 355 360 365
 Gly Asp Phe Gly Ile Asp Trp Lys Trp Asp
 370 375

<210> 7485

<211> 69

<212> PRT

<213> B.fragilis

<400> 7485

Ile Leu Ala Ala Ile Phe Val Ile Pro Lys Leu Lys Glu Tyr Pro Pro
 1 5 10 15

Met Ser Arg Glu Glu Leu Gln Gln Lys Ser Arg Phe Ala Met Ile Gly
 20 25 30
 Thr Leu Met Thr Ile Val Ser Leu Val Phe Leu Phe Tyr Val Gly Ser
 35 40 45
 Ser Leu Val Asn Thr Thr Lys Lys Tyr Lys Glu Leu Ala Ile Glu Ile
 50 55 60
 Ala Cys Ile Asn Lys
 65

<210> 7486

<211> 134

<212> PRT

<213> B.fragilis

<400> 7486

Lys Gly Glu Ala Asp Ser Phe Ser Leu Phe Ser Tyr Leu Phe Phe Ser
 1 5 10 15
 Ser Ala Arg Lys Ala Gly Val Arg Gly Glu Lys Ser Gly Leu Gly Arg
 20 25 30
 Met Lys Val Trp Leu Ser Asn Pro Asn Arg Arg Leu Leu Arg Pro Gly
 35 40 45
 Gln Thr Pro Ser Ser Asp Lys Asp Glu Ala Leu Phe Cys Tyr Ile Thr
 50 55 60
 Ile Tyr Val Thr Gly Ile Ser Pro Ile Val Ile Gly Ser Ser Ser Ile
 65 70 75 80
 Arg Leu Ile Lys His Lys Asn Ala Ile Asp Lys Ile Gln Leu Gly Phe
 85 90 95
 Pro Phe Leu Leu Tyr Glu Leu Thr Asp Gln Gly Asn Lys Ile Phe Ser
 100 105 110
 Val Leu Phe Leu Phe Ile Phe Thr Asn Pro Val Asp Val Thr Glu Gly
 115 120 125
 Phe Asp Cys Arg Gly Thr
 130

<210> 7487

<211> 173

<212> PRT

<213> B.fragilis

<400> 7487

Asn Tyr Phe Leu Val Leu Ser Thr Asn Gly Leu Lys Glu Thr Lys Asn
 1 5 10 15
 Met Glu Ile Glu Lys Asp Phe Ile Asp Leu Leu Thr Glu His Lys Ala
 20 25 30
 Leu Ile Tyr Lys Val Cys Phe Met Tyr Ala Ser Asn Gln Glu Asp Leu
 35 40 45
 Asn Asp Leu Tyr Gln Glu Val Val Val Asn Leu Trp Cys Ser Tyr Pro
 50 55 60
 Lys Phe Arg Tyr Glu Ser Lys Leu Ser Thr Trp Ile Tyr Arg Val Ala
 65 70 75 80
 Leu Asn Thr Cys Ile Ser Asp Leu Arg Lys Lys Lys Ile Leu Asp Tyr
 85 90 95
 Val Pro Leu Ser Val Asp Ile Gly Val Tyr Asp Asp Cys Leu Arg Asn
 100 105 110
 Asp Ser Leu Lys Glu Met Tyr Gln Leu Ile Cys Gln Leu Asp Arg Tyr
 115 120 125
 Glu Arg Met Leu Val Leu Leu Trp Leu Asp Glu Asn Ser Tyr Asp Glu
 130 135 140
 Ile Ala Ser Ile Thr Gly Ser Asn Arg Asn Thr Val Ala Val Lys Leu

145 150 155 160
 His Arg Ile Lys Asp Lys Leu Lys Lys Met Ser Asn Gln
 165 170

<210> 7488

<211> 565

<212> PRT

<213> B.fragilis

<400> 7488

Ile Cys Ser Gln Pro Leu Lys Lys Cys Phe Met Thr Arg Val Pro Phe
 1 5 10 15
 Thr Gln Asn Tyr Arg Trp His Leu Pro Leu Leu Leu Val Phe Cys
 20 25 30
 Cys Ser Phe Phe Ile Asn Asn Gly Ala Ile Phe Ala Asp Ile Met Glu
 35 40 45
 Ser Arg Asn Ile Ile Thr Ala Arg Glu Met Val Tyr Asp His Asn Trp
 50 55 60
 Leu Val Pro Thr Met Asn Gly Glu Leu Arg Leu Glu Lys Pro Pro Leu
 65 70 75 80
 Pro Thr Trp Ile Ala Ile Thr Glu Met Ile Ser Pro Asp Asn Leu
 85 90 95
 Pro Leu Gln Arg Ala Met Ala Gly Phe Ala Ala Val Met Leu Val Leu
 100 105 110
 Phe Phe Tyr Lys Phe Ala Thr Lys Leu Thr Asp Asn Arg Thr Tyr Ala
 115 120 125
 Leu Val Ser Ser Leu Val Leu Cys Thr Ser Tyr Asn Ile Ile Leu Met
 130 135 140
 Gly Arg Thr Ala Thr Trp Asp Ile Tyr Cys His Ala Phe Met Ile Gly
 145 150 155 160
 Ala Ile Tyr Tyr Leu Tyr Leu Ala Leu Arg Gln Asn Thr Cys Lys Trp
 165 170 175
 Thr Tyr Phe Ile Gly Ala Gly Ile Phe Met Gly Leu Ser Phe Leu Gly
 180 185 190
 Lys Gly Pro Val Ser Phe Tyr Ala Leu Leu Leu Pro Phe Val Cys Ala
 195 200 205
 Tyr Ile Leu Tyr Tyr Arg Lys Glu Thr Gln Met Lys Gly Lys Trp Ile
 210 215 220
 Ala Leu Ala Val Met Ile Leu Ile Gly Ile Val Leu Ser Thr Trp Trp
 225 230 235 240
 Tyr Ala Tyr Ile Tyr Ile Tyr His Gln Glu Met Ala Ser Tyr Val Phe
 245 250 255
 His Lys Glu Ser Ser Ser Trp Ser Asn His Asn Val Arg Ser Trp Tyr
 260 265 270
 Tyr Tyr Trp Gln Phe Phe Leu Glu Thr Gly Val Trp Ser Leu Leu Thr
 275 280 285
 Leu Thr Thr Leu Leu Val Pro Phe Trp Lys Lys Arg Val Glu Ser Ser
 290 295 300
 Lys Glu Tyr Leu Phe Cys Leu Ser Trp Met Leu Leu Ile Leu Phe Phe
 305 310 315 320
 Leu Ser Leu Leu Pro Glu Lys Lys Thr Arg Tyr Leu Leu Pro Ile Leu
 325 330 335
 Leu Pro Ala Ala Leu Thr Met Gly His Leu Phe Val Tyr Trp Ile Arg
 340 345 350
 Gln Ala Lys Gln Lys Met Pro Gln Leu Lys Asp Arg Val Leu Tyr Arg
 355 360 365
 Ile Asn Ala Tyr Leu Ile Val Val Ala Ala Leu Ala Leu Pro Ile Ala
 370 375 380
 Leu Tyr Leu Phe Met Tyr Arg Glu Gly Arg Met Gly Thr Gly Met Phe

3852
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385	Val Trp Leu Val	390	Val Leu Phe Leu Thr	395	Val Ala Val Trp Leu Phe Arg	400
	405		410		415	
Ser Ala Phe Lys	Leu Gln Pro Phe Ser	Phe Leu Met Gly	Ile Val Ala			
	420		425		430	
Leu Phe Ala Val	Ala Glu Leu Phe Val	Met Pro Tyr	Ile Gly Ser Phe			
	435		440		445	
Val Ser Asn Ser	Asp Pro Lys Ser Ile Ser	Ala Thr Arg Glu	Asn Pro			
	450		455		460	
Glu Leu Gln Pro	Leu Pro Phe Tyr His Ser	Lys Asp Glu Val	Leu Arg			
465		470		475		480
Ile Glu Leu Val	Tyr Glu Ala His Lys Lys	Ile Gly Asp Met Asp	Leu			
	485		490		495	
Thr Asn Lys Glu	Glu Ile Ile Lys Ala Leu	Pro Phe Val Leu	Ile Ser			
	500		505		510	
Gln Lys Pro Ala	Glu Leu Leu Ile Pro	Asp Ser Ile Arg	Lys Asp Leu			
	515		520		525	
Asn Leu Arg Phe	Ile Asp Cys Tyr Asp	Asn Asn Arg Trp	Ala Lys Gly			
	530		535		540	
His Lys Arg Tyr	Asp Ser Val Phe Ile Ser	Asn Val Thr Ile	Val Glu			
545		550		555		560
Pro Ile Lys Glu	Gln					
	565					

<210> 7489
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 7489	
His Ser Val Lys	Ala Cys Ser Leu Asp Val Asn Lys Lys Phe Phe Lys
1	5 10 15
Cys Lys Arg Leu	Val Ile Cys Ala Gln Glu Pro Asp Asn Pro Gln Lys
	20 25 30
Ala Leu Thr Met	Leu Ile Glu Lys Arg Tyr Lys Asp Glu Asp Thr Gly
	35 40 45
Ser Asp Gly Val	Asn Ser Phe Pro Lys Leu Glu Leu Ser Tyr Ser Ala
	50 55 60
Gly Val Cys Leu	Phe Leu Lys Gln Ala Lys Arg Thr Ile Ile Asn
65	70 75 80
Leu Lys Ile Lys	Lys
	85

<210> 7490
 <211> 551
 <212> PRT
 <213> B.fragilis

<400> 7490	
Leu Asn Ser Lys	Ile Val Met Ala Lys Glu Ile Leu Phe Asn Ile Glu
1	5 10 15
Ala Arg Asp Gln	Leu Lys Lys Gly Val Asp Ala Leu Ala Asn Ala Val
	20 25 30
Lys Val Thr Leu	Gly Pro Lys Gly Arg Asn Val Ile Ile Glu Lys Lys
	35 40 45
Phe Gly Ala Pro	His Ile Thr Lys Asp Gly Val Thr Val Ala Lys Glu
	50 55 60
Ile Glu Leu Thr	Asp Ala Tyr Gln Asn Thr Gly Ala Gln Leu Val Lys
65	70 75 80

Glu Val Ala Ser Lys Thr Gly Asp Asp Ala Gly Asp Gly Thr Thr Thr
 85 90 95
 Ala Thr Val Leu Ala Gln Ala Ile Ile Ala Glu Gly Leu Lys Asn Val
 100 105 110
 Thr Ala Gly Ala Ser Pro Met Asp Ile Lys Arg Gly Ile Asp Lys Ala
 115 120 125
 Val Ala Lys Val Val Asp Ser Ile Lys His Gln Ala Glu Lys Val Gly
 130 135 140
 Asp Asn Tyr Asp Lys Ile Glu Gln Val Ala Thr Val Ser Ala Asn Asn
 145 150 155 160
 Asp Pro Val Ile Gly Lys Leu Ile Ala Asp Ala Met Arg Lys Val Ser
 165 170 175
 Lys Asp Gly Val Ile Thr Ile Glu Glu Ala Lys Gly Thr Asp Thr Thr
 180 185 190
 Ile Gly Val Val Glu Gly Met Gln Phe Asp Arg Gly Tyr Leu Ser Ala
 195 200 205
 Tyr Phe Val Thr Asn Thr Glu Lys Met Glu Cys Glu Met Glu Lys Pro
 210 215 220
 Tyr Ile Leu Ile Tyr Asp Lys Lys Ile Ser Asn Leu Lys Asp Phe Leu
 225 230 235 240
 Pro Ile Leu Glu Pro Ala Val Gln Ser Gly Arg Pro Leu Leu Val Ile
 245 250 255
 Ala Glu Asp Val Asp Ser Glu Ala Leu Thr Thr Leu Val Val Asn Arg
 260 265 270
 Leu Arg Ser Gln Leu Lys Ile Cys Ala Val Lys Ala Pro Gly Phe Gly
 275 280 285
 Asp Arg Arg Lys Glu Met Leu Glu Asp Ile Ala Val Leu Thr Gly Gly
 290 295 300
 Val Val Ile Ser Glu Glu Lys Gly Leu Lys Leu Glu Gln Ala Thr Ile
 305 310 315 320
 Glu Met Leu Gly Thr Ala Asp Lys Val Thr Val Ser Lys Asp Asn Thr
 325 330 335
 Thr Ile Val Asn Gly Ala Gly Ala Lys Glu Asn Ile Lys Glu Arg Cys
 340 345 350
 Asp Gln Ile Lys Ala Gln Ile Ala Ala Thr Lys Ser Asp Tyr Asp Arg
 355 360 365
 Glu Lys Leu Gln Glu Arg Leu Ala Lys Leu Ser Gly Gly Val Ala Val
 370 375 380
 Leu Tyr Val Gly Ala Ala Ser Glu Val Glu Met Lys Glu Lys Lys Asp
 385 390 395 400
 Arg Val Asp Asp Ala Leu Arg Ala Thr Arg Ala Ala Ile Glu Glu Gly
 405 410 415
 Ile Val Ala Gly Gly Gly Val Ala Tyr Ile Arg Ala Ile Glu Ser Leu
 420 425 430
 Asp Gly Leu Lys Gly Glu Asn Asp Asp Glu Thr Thr Gly Ile Ala Ile
 435 440 445
 Ile Lys Arg Ala Ile Glu Glu Pro Leu Arg Gln Ile Val Ala Asn Ala
 450 455 460
 Gly Lys Glu Gly Ala Val Val Val Gln Lys Val Ser Glu Gly Lys Gly
 465 470 475 480
 Asp Phe Gly Tyr Asn Ala Arg Thr Asp Val Tyr Glu Asn Met His Ala
 485 490 495
 Ala Gly Val Val Asp Pro Ala Lys Val Thr Arg Val Ala Leu Glu Asn
 500 505 510
 Ala Ala Ser Ile Ala Gly Met Phe Leu Thr Thr Glu Cys Val Ile Val
 515 520 525
 Glu Lys Lys Glu Asp Lys Pro Glu Met Pro Met Gly Ala Pro Gly Met
 530 535 540
 Gly Gly Met Gly Gly Met Met

545

550

<210> 7491
 <211> 338
 <212> PRT
 <213> B.fragilis

<400> 7491

Thr	Val	Ala	Lys	Val	Arg	Phe	Phe	Ser	Leu	Ser	Leu	Arg	Ile	Asn	Cys
1				5					10					15	
Gly	Lys	Thr	Glu	Arg	Tyr	Met	Ala	Lys	Ile	Ala	Lys	Lys	Leu	Thr	Glu
			20					25					30		
Leu	Ile	Gly	His	Thr	Pro	Leu	Met	Glu	Leu	Ser	Gly	Tyr	Ser	Arg	Lys
		35					40					45			
Tyr	Gly	Leu	Gln	Glu	Asn	Ile	Val	Ala	Lys	Leu	Glu	Ser	Phe	Asn	Pro
	50					55					60				
Ala	Gly	Ser	Val	Lys	Asp	Arg	Val	Ala	Leu	Ser	Met	Ile	Glu	Asp	Ala
65					70					75				80	
Glu	Glu	Arg	Gly	Val	Leu	Gln	Pro	Gly	Ala	Thr	Ile	Ile	Glu	Pro	Thr
				85					90					95	
Ser	Gly	Asn	Thr	Gly	Val	Gly	Leu	Ala	Met	Val	Ala	Thr	Ile	Lys	Gly
		100						105					110		
Tyr	Arg	Leu	Ile	Leu	Thr	Met	Pro	Glu	Thr	Met	Ser	Leu	Glu	Arg	Arg
		115					120						125		
Asn	Leu	Leu	Lys	Ala	Leu	Gly	Ala	Gln	Ile	Val	Leu	Thr	Asn	Gly	Gln
	130					135					140				
Lys	Gly	Met	Ala	Gly	Ser	Ile	Ala	Lys	Ala	Glu	Glu	Leu	Lys	Lys	Ser
145					150					155					160
Ile	Pro	Gly	Ser	Val	Ile	Leu	Gln	Gln	Phe	Glu	Asn	Pro	Ala	Asn	Thr
				165					170					175	
Glu	Val	His	Ala	Arg	Ser	Thr	Gly	Glu	Glu	Ile	Trp	Gln	Asp	Thr	Asp
			180					185					190		
Gly	Glu	Val	Ala	Val	Phe	Val	Ala	Gly	Val	Gly	Thr	Gly	Gly	Thr	Val
		195					200					205			
Cys	Gly	Val	Ala	Arg	Ala	Leu	Lys	Lys	His	Asn	Pro	Asn	Val	Tyr	Ile
	210					215					220				
Val	Ala	Val	Glu	Pro	Ala	Ser	Ser	Pro	Val	Leu	Glu	Gly	Gly	Lys	Ala
225					230					235					240
Ala	Ser	His	Arg	Ile	Gln	Gly	Ile	Gly	Ala	Asn	Phe	Val	Pro	Gly	Ile
			245						250					255	
Tyr	Asp	Ala	Ser	Val	Val	Asp	Glu	Val	Met	Pro	Val	Pro	Asp	Asp	Glu
		260					265						270		
Ala	Ile	Arg	Gly	Gly	Arg	Glu	Leu	Ala	Ser	Thr	Glu	Gly	Leu	Leu	Val
		275					280					285			
Gly	Ile	Ser	Ser	Gly	Ala	Ala	Val	Tyr	Ala	Ala	Arg	Gln	Leu	Ala	Gly
	290					295					300				
Arg	Pro	Glu	Phe	Lys	Gly	Lys	Met	Ile	Val	Thr	Leu	Leu	Pro	Asp	Thr
305					310					315				320	
Gly	Glu	Arg	Tyr	Leu	Thr	Thr	Glu	Leu	Phe	Ala	Phe	Asp	Ala	Tyr	Pro
				325					330					335	

Leu Asp

<210> 7492
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 7492

Val Arg Lys Lys Gly Glu Ala Val Ser Phe Pro Leu Leu Leu Tyr Phe
 1 5 10 15
 Asn Leu Asn Ile Val Tyr Asp Tyr Ala Asp Lys Asp Thr Thr Ile Asn
 20 25 30
 Asn Lys Ser Gln Val Leu Gly Leu Leu Phe Phe Arg Ile Ile Cys Ile
 35 40 45
 Val Ala Ser Val Arg Glu His Arg Gln Glu Ala Leu Pro Ala Lys
 50 55 60

<210> 7493

<211> 181

<212> PRT

<213> B.fragilis

<400> 7493

Ser Met Lys Lys Arg Ala Phe Phe Leu Leu Leu Leu Leu Ile Pro
 1 5 10 15
 Leu Thr Ser Ile Leu Ser Gln Glu Ile Ala Leu Lys Thr Asn Val Leu
 20 25 30
 Ser Trp Ala Thr Thr Thr Ile Asn Leu Gly Ala Glu Phe Lys Ile Ser
 35 40 45
 Pro Arg Leu Thr Ala Gly Ala Asp Ile Met Tyr Lys Gly Trp Ser Phe
 50 55 60
 Leu Ser Asp Asn Arg Lys Met Gly Gly Phe Leu Val Gln Pro Glu Ala
 65 70 75 80
 Lys Tyr Trp Phe Cys Ile Pro Phe Tyr Lys His Phe Met Gly Leu His
 85 90 95
 Ala His Tyr Gly Gln Tyr Asn Gly Gly Phe Ser Lys Tyr Arg Tyr Gln
 100 105 110
 Gly Asp Leu Tyr Gly Ile Gly Leu Ser Tyr Gly Tyr Gln Trp Ile Trp
 115 120 125
 Lys Arg Arg Trp Asn Ile Glu Val Ser Ala Gly Ile Gly Tyr Ala Ser
 130 135 140
 Met Asn Tyr Asp Lys Tyr Glu Arg Pro Lys Cys Gly Leu Phe Leu Gly
 145 150 155 160
 Lys Asp His Ser Asn Tyr Phe Gly Leu Thr Lys Leu Gly Val Ser Leu
 165 170 175
 Ile Tyr Ile Leu Lys
 180

<210> 7494

<211> 270

<212> PRT

<213> B.fragilis

<400> 7494

Leu Thr Thr Leu Arg Thr Arg Arg Glu Asp Arg Phe Leu Arg Pro Asn
 1 5 10 15
 Leu Thr His Ser Met Asp Leu Tyr Tyr Gly Ala Trp Ala Val Leu Asp
 20 25 30
 Pro Thr Arg Asn Met Val Asp Ala Phe Glu Cys Thr Asp Gly Lys Pro
 35 40 45
 Trp Gly Glu Ser Pro Leu Thr Val Arg Pro Asp Glu Ser Ile Leu Tyr
 50 55 60
 Gly Asn Asp Asp Ala Leu Lys Lys Ala Glu Arg Ala Lys Met Phe Met
 65 70 75 80
 Asn Arg Asp Arg Arg Leu Tyr Glu Ser Val Asn His Ser Met Met Ala
 85 90 95
 Asn Phe Val Asp Asp Gly Phe Lys Asp Glu Glu Val Gln Val Asn Glu

100	105	110
Ser Asn Asn Lys Gly Pro Thr Gly Phe Ser Ala Leu Lys Tyr Val Gln		
115	120	125
Pro Thr Asp Val Thr Pro Gly Tyr Ser Thr Val Ser Asp Ala Asp Ile		
130	135	140
Val Val Leu Arg Tyr Ala His Val Leu Leu Met Ile Ala Glu Ala Glu		
145	150	155
Asn Glu Ala His Gly Ala Thr Thr Thr Ala Leu Asn Ala Ile Asn Glu		
165	170	175
Val Arg Thr Arg Ser Gly Gln Pro Ala Ile Glu Ala Gly Ile Ser Gln		
180	185	190
Asp Asp Leu Arg Glu Arg Ile Arg Asn Glu Trp Arg Ile Glu Thr Cys		
195	200	205
Phe Glu Gly Leu Arg Tyr Phe Gln Leu Lys Arg Trp Lys Leu Met Asp		
210	215	220
Lys Arg Val Asn Gly Val Glu Asp Pro Ala Tyr Pro Gly Tyr Ile Lys		
225	230	235
Val Tyr Lys Pro Ala Phe Glu Phe Phe Pro Ile Pro Gln Ser Glu Ile		
245	250	255
Asp Lys Ala Gly Gly Val Leu Lys Gln Asp Pro Ala Tyr Glu		
260	265	270

<210> 7495

<211> 232

<212> PRT

<213> B.fragilis

<400> 7495

Ile Arg Lys Asn Met Val Ile Gly Phe Gln Trp Ile Ile Phe Ile Gly		
1	5	10
Ile Ala Leu Val Ser Trp Leu Val Gln Met Asn Leu Gln Asn Lys Phe		
20	25	30
Lys Lys Tyr Ser Lys Ile Pro Thr Gly Asn Gly Met Thr Gly Arg Asp		
35	40	45
Val Ala Ile Lys Met Leu Gln Asp Asn Gly Ile Tyr Asp Val Gln Val		
50	55	60
Thr His Thr Pro Gly Gln Leu Thr Asp His Tyr Asn Pro Ala Asn Lys		
65	70	75
Thr Val Asn Leu Ser Glu Gly Val Tyr Asp Ser Asn Ser Ile Met Ala		
85	90	95
Ala Ala Val Ala Ala His Glu Cys Gly His Ala Val Gln His Ala Arg		
100	105	110
Ala Tyr Ala Pro Leu Thr Leu Arg Ser Lys Leu Val Pro Val Val Ser		
115	120	125
Phe Ala Ser Gln Trp Met Thr Trp Leu Leu Leu Ala Gly Ile Leu Leu		
130	135	140
Leu Glu Ser Phe Pro Gln Leu Leu Phe Ala Gly Ile Ile Leu Phe Ala		
145	150	155
Met Thr Thr Leu Phe Ser Phe Ile Thr Leu Pro Val Glu Ile Asp Ala		
165	170	175
Ser Lys Arg Ala Leu Val Trp Leu Ser Ala Ser Gly Ile Thr Asn Ser		
180	185	190
Tyr Asn His Arg Gln Ala Glu Asp Ala Leu Arg Ser Ala Ala Tyr Thr		
195	200	205
Tyr Val Val Ala Ala Leu Gly Ser Leu Ala Thr Leu Ile Tyr Tyr Ile		
210	215	220
Met Ile Phe Met Gly Arg Arg Glu		
225	230	

100 105 110
 115 120 125
 130 135 140
 145 150 155
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235
 245 250 255
 260 265 270

<210> 7496
 <211> 684
 <212> PRT
 <213> B.fragilis

<400> 7496

Ser	Met	Lys	Lys	His	Leu	Ile	Ser	Met	Ala	Ala	Thr	Val	Ile	Leu	Leu
1				5					10					15	
Thr	Ala	Cys	Gly	Gly	Ala	Lys	Lys	Thr	Asn	Thr	Ala	Glu	Ala	Asp	Asn
			20					25					30		
Phe	Lys	Tyr	Thr	Val	Glu	Gln	Phe	Ala	Asp	Leu	Gln	Ile	Leu	Arg	Tyr
		35					40					45			
Arg	Val	Pro	Gly	Phe	Glu	Asn	Leu	Thr	Leu	Lys	Gln	Lys	Glu	Leu	Val
	50					55					60				
Tyr	Tyr	Leu	Thr	Gln	Ala	Ala	Leu	Glu	Gly	Arg	Asp	Ile	Leu	Phe	Asp
65					70					75					80
Gln	Asn	Gly	Lys	Tyr	Asn	Leu	Thr	Ile	Arg	Arg	Met	Leu	Glu	Thr	Ile
				85					90					95	
Tyr	Thr	Asp	Tyr	Thr	Gly	Asp	Arg	Asn	Ser	Pro	Asp	Phe	Val	Asn	Leu
			100					105					110		
Thr	Thr	Tyr	Leu	Lys	Arg	Val	Trp	Phe	Ser	Asn	Gly	Ile	His	His	His
		115					120					125			
Tyr	Gly	Ser	Glu	Lys	Phe	Val	Pro	Gly	Phe	Thr	Pro	Glu	Phe	Leu	Lys
	130					135					140				
Gln	Ala	Leu	Leu	Ser	Val	Asp	Ala	Ser	Lys	Leu	Pro	Leu	Ala	Gln	Gly
145					150					155					160
Gln	Thr	Val	Glu	Gln	Leu	Phe	Glu	Glu	Leu	Ser	Pro	Val	Ile	Phe	Asp
				165					170					175	
Pro	Lys	Val	Met	Pro	Lys	Arg	Val	Asn	Gln	Ala	Asp	Gly	Glu	Asp	Leu
			180					185					190		
Val	Leu	Thr	Ser	Ala	Ser	Asn	Tyr	Tyr	Asp	Gly	Val	Thr	Gln	Gln	Glu
		195					200					205			
Ala	Glu	Ala	Phe	Tyr	Asn	Ala	Leu	Lys	Asn	Pro	Lys	Asp	Glu	Thr	Pro
	210					215					220				
Val	Ser	Tyr	Gly	Leu	Asn	Ser	Arg	Leu	Val	Lys	Glu	Asp	Gly	Lys	Ile
225					230					235					240
Ile	Glu	Lys	Val	Trp	Lys	Val	Gly	Gly	Leu	Tyr	Thr	Gln	Ala	Ile	Glu
				245					250					255	
Lys	Ile	Val	Tyr	Trp	Leu	Lys	Lys	Ala	Glu	Gly	Val	Ala	Glu	Asp	Asp
			260					265					270		
Ala	Gln	Lys	Ala	Ala	Ile	Gly	Lys	Leu	Ile	Glu	Tyr	Tyr	Glu	Thr	Gly
		275					280					285			
Asp	Leu	Lys	Thr	Phe	Asp	Glu	Tyr	Ala	Ile	Leu	Trp	Val	Lys	Asp	Leu
	290					295					300				
Asn	Ser	Arg	Val	Asp	Phe	Thr	Asn	Gly	Phe	Thr	Glu	Ser	Tyr	Gly	Asp
305					310					315					320
Pro	Leu	Gly	Met	Lys	Ala	Ser	Trp	Glu	Ser	Ile	Val	Asn	Phe	Lys	Asp
				325					330					335	
Leu	Glu	Ala	Thr	Arg	Arg	Thr	Glu	Leu	Ile	Ser	Ser	Asn	Ala	Gln	Trp
			340					345					350		
Phe	Glu	Asp	His	Ser	Pro	Val	Asp	Lys	Gln	Phe	Lys	Lys	Glu	Lys	Val
		355					360					365			
Lys	Gly	Val	Thr	Ala	Lys	Val	Ile	Thr	Ala	Ala	Ile	Leu	Gly	Gly	Asp
	370					375					380				
Leu	Tyr	Pro	Ser	Thr	Ala	Ile	Gly	Ile	Asn	Leu	Pro	Asn	Ser	Asn	Trp
385					390					395					400
Ile	Arg	Ser	His	His	Gly	Ser	Lys	Ser	Val	Thr	Ile	Gly	Asn	Ile	Thr
				405					410					415	
Asp	Ala	Tyr	Asn	Lys	Ala	Ala	His	Gly	Asn	Gly	Phe	Asn	Glu	Glu	Phe

Val	Tyr	Ser	Asp	Thr	Glu	Lys	Gln	Leu	Ile	Asp	Lys	Tyr	Ala	Asp	Leu
		435						440					445		
Thr	Gly	Glu	Leu	His	Thr	Asp	Leu	His	Glu	Cys	Leu	Gly	His	Gly	Ser
		450					455					460			
Gly	Lys	Leu	Leu	Pro	Gly	Val	Asp	Pro	Asp	Ala	Leu	Lys	Ala	Tyr	Gly
465						470					475				480
Ser	Thr	Ile	Glu	Glu	Ala	Arg	Ala	Asp	Leu	Phe	Gly	Leu	Tyr	Tyr	Val
				485					490					495	
Ala	Asp	Pro	Lys	Leu	Leu	Glu	Leu	Gly	Leu	Val	Pro	Ser	Glu	Asp	Ala
			500						505				510		
Tyr	Lys	Ala	Glu	Tyr	Tyr	Thr	Tyr	Leu	Met	Asn	Gly	Leu	Met	Thr	Gln
		515						520				525			
Leu	Val	Arg	Ile	Glu	Pro	Gly	Asn	Ser	Val	Glu	Glu	Ala	His	Met	Arg
		530					535					540			
Asn	Arg	Gln	Leu	Ile	Ala	Arg	Trp	Val	Phe	Glu	Lys	Gly	Lys	Ala	Asp
545						550					555				560
Lys	Val	Val	Glu	Met	Val	Gln	Lys	Asp	Gly	Lys	Thr	Tyr	Val	Val	Val
				565					570					575	
Asn	Asp	Tyr	Gln	Lys	Leu	Arg	His	Leu	Phe	Gly	Glu	Leu	Leu	Ala	Glu
			580					585					590		
Ile	Gln	Arg	Ile	Lys	Ser	Thr	Gly	Asp	Phe	Asp	Ala	Ala	Arg	Ser	Leu
		595					600					605			
Val	Glu	Asn	Tyr	Ala	Val	Lys	Val	Asp	Pro	Glu	Leu	His	Ser	Glu	Val
		610					615					620			
Leu	Thr	Arg	Tyr	Lys	Lys	Leu	Asn	Leu	Ala	Pro	Tyr	Lys	Gly	Phe	Val
625						630					635				640
Asn	Pro	Arg	Tyr	Asp	Ala	Val	Ile	Asp	Glu	Gln	Gly	Asn	Ile	Val	Asp
					645					650				655	
Val	Gln	Val	Thr	Tyr	Asp	Glu	Gly	Tyr	Ala	Glu	Gln	Met	Leu	Arg	Tyr
			660					665					670		
Ser	Arg	Asp	Tyr	Ser	Pro	Leu	Pro	Ser	Ile	Asn	Asp				
		675					680								

<210> 7497
 <211> 294
 <212> PRT
 <213> B.fragilis

<400> 7497															
Lys	Glu	Ile	Glu	Glu	Ser	Asp	Val	Asp	Phe	Asp	His	Gln	Phe	Leu	Glu
1				5					10				15		
Thr	Glu	Lys	Tyr	Asp	Ala	Lys	Pro	Thr	Tyr	Lys	Lys	Phe	Leu	Gly	Tyr
			20					25				30			
Arg	Pro	Gly	Val	Tyr	Val	Ile	Gly	Asp	Lys	Ile	Val	Tyr	Ile	Glu	Asn
			35				40					45			
Ser	Asp	Gly	Asn	Thr	Asn	Val	Arg	Phe	His	Gln	Ala	Asp	Thr	His	Lys
		50			55						60				
Arg	Phe	Phe	Ala	Leu	Leu	Glu	Ser	Gln	Asn	Ile	Arg	Val	Asn	Arg	Phe
65					70					75				80	
Arg	Ala	Asp	Cys	Gly	Ser	Cys	Ser	Lys	Glu	Ile	Val	Ser	Glu	Ile	Glu
			85						90					95	
Lys	His	Cys	Lys	His	Phe	Tyr	Ile	Arg	Ala	Asn	Arg	Cys	Ser	Ser	Leu
			100					105				110			
Tyr	Asn	Asp	Ile	Phe	Ala	Leu	Arg	Gly	Trp	Lys	Thr	Glu	Glu	Ile	Asn
		115					120					125			
Gly	Ile	Gln	Phe	Glu	Leu	Asn	Ser	Ile	Leu	Val	Glu	Lys	Trp	Glu	Gly
		130				135					140				
Lys	Cys	Tyr	Arg	Leu	Val	Ile	Gln	Arg	Gln	Arg	Arg	Asn	Ser	Gly	Asp

145 150 155 160
 Leu Asp Leu Trp Glu Gly Glu Tyr Thr Tyr Arg Cys Ile Leu Thr Asn
 165 170 175
 Asp Tyr Lys Ser Ser Thr Arg Asp Ile Val Glu Phe Tyr Asn Leu Arg
 180 185 190
 Gly Gly Lys Glu Arg Ile Phe Asp Asp Met Asn Asn Gly Phe Gly Trp
 195 200 205
 Ser Arg Leu Pro Lys Ser Phe Met Ala Glu Asn Thr Val Phe Leu Leu
 210 215 220
 Leu Thr Ala Leu Ile His Asn Phe Tyr Lys Thr Ile Met Ser Arg Leu
 225 230 235 240
 Asp Thr Lys Ala Phe Gly Leu Lys Lys Thr Ser Arg Ile Lys Ala Phe
 245 250 255
 Val Phe Arg Phe Ile Ser Val Pro Ala Lys Trp Ile Met Thr Ala Arg
 260 265 270
 Gln Tyr Val Leu Asn Ile Tyr Thr Glu Asn Arg Ala Tyr Ala Lys Pro
 275 280 285
 Phe Lys Thr Glu Phe Gly
 290

<210> 7498

<211> 225

<212> PRT

<213> B.fragilis

<400> 7498

Pro Gln Asn Asp Met Thr Asn Asp Met Ile Gln Leu Leu Val Asn Thr
 1 5 10 15
 Asp Gln Asn Leu Leu Leu Tyr Leu Asn Gly Phe His Asn Ala Phe Gly
 20 25 30
 Asp Tyr Phe Met Ser Thr Phe Thr Gly Lys Trp Ile Trp Val Pro Met
 35 40 45
 Tyr Ala Ser Ile Leu Tyr Val Leu Leu Lys Asn Phe Asn Trp Lys Ile
 50 55 60
 Thr Leu Cys Cys Leu Thr Ala Ile Ala Leu Thr Ile Leu Phe Ala Asp
 65 70 75 80
 Gln Val Cys Ala Ser Leu Ile Arg Pro Ala Val Glu Arg Leu Arg Pro
 85 90 95
 Ser Asn Pro Ala Asn Pro Ile Ser Asp Leu Val His Ile Val Asn Asn
 100 105 110
 Tyr Arg Gly Gly Arg Tyr Gly Phe Pro Ser Cys His Ala Ser Asn Ser
 115 120 125
 Phe Gly Leu Ala Phe Phe Leu Val Phe Leu Phe Arg Lys Arg Trp Leu
 130 135 140
 Ser Leu Phe Ile Leu Leu Trp Ala Thr Leu Asn Cys Tyr Thr Arg Ile
 145 150 155 160
 Tyr Leu Gly Val His Tyr Pro Gly Asp Leu Ile Val Gly Ala Ile Ile
 165 170 175
 Gly Cys Cys Gly Ala Ala Phe Met Cys Tyr Leu Leu Lys Lys Thr Ala
 180 185 190
 Arg Gly Ala Ser Phe Gly Lys Val Lys His Thr Glu Ile Thr Ile Tyr
 195 200 205
 Val Gly Leu Leu Thr Thr Ile Gly Ile Val Val Tyr Ala Ser Ile Met
 210 215 220
 Ala
 225

<210> 7499

<211> 231

<212> PRT
 <213> B.fragilis

<400> 7499

Arg	Tyr	Arg	Glu	Gly	Arg	Tyr	Thr	Gly	Val	Gln	Asn	Glu	Ile	Thr	Asn
1				5					10					15	
Tyr	Lys	Leu	Lys	Thr	Thr	Met	Asp	Lys	Lys	Leu	Leu	Met	Met	Ala	Leu
			20					25					30		
Leu	Ile	Thr	Thr	Gly	Leu	Ala	Thr	His	Ala	Gln	Glu	Lys	Leu	Thr	Arg
		35					40					45			
Tyr	Gln	Val	Arg	Asn	Ala	Ile	Thr	Val	Arg	Thr	Pro	Ile	Met	Asn	Asp
	50					55					60				
Ser	Ile	Asn	Pro	Lys	Gly	Glu	Lys	His	Thr	Ala	Lys	Ala	Leu	Leu	Gln
65					70					75					80
Thr	Pro	Val	Val	Leu	Asp	Leu	Ala	Asn	Ala	Pro	Thr	Gln	Met	Thr	Ala
				85				90						95	
Ala	Asp	Thr	Ala	Gly	Leu	Val	Thr	Phe	Ala	Lys	Ala	Asp	Lys	Asp	Asn
			100					105					110		
Leu	Leu	Tyr	Leu	Ile	Lys	Thr	Gln	Leu	Arg	Ala	Glu	Arg	Phe	Met	Lys
		115					120					125			
Gly	Lys	Leu	Lys	Val	Thr	Ser	Pro	Val	Arg	Trp	Glu	Leu	Phe	Ile	Asn
	130					135					140				
Gly	Glu	Ser	Lys	Met	Val	Lys	Asp	Ala	Ser	Glu	Asp	Ser	Ile	Ser	Lys
145				150						155					160
Ala	Ala	Thr	Lys	Glu	Val	Ala	Leu	Arg	Leu	Glu	Pro	Glu	Met	Asp	Tyr
				165					170					175	
Glu	Ile	Ala	Ile	Lys	Leu	Leu	Ser	Thr	Pro	Asp	Asp	Lys	Thr	Val	Pro
			180					185					190		
Ser	Leu	Lys	Cys	Glu	Leu	Val	Lys	Asp	Asp	Lys	Phe	Lys	Glu	Val	Ala
		195					200					205			
Cys	Ser	Thr	Asp	Pro	Glu	Gln	Lys	His	Arg	Phe	Ser	Leu	Asp	Asn	Thr
	210					215						220			
Asn	Leu	Arg	Glu	Thr	Gly	Pro									
225					230										

<210> 7500

<211> 166

<212> PRT

<213> B.fragilis

<400> 7500

Asn	Gly	Ala	Asp	Met	Glu	Thr	Gln	Asn	Val	Lys	Asp	Thr	Val	Arg	Gln
1				5					10					15	
Ile	Phe	Thr	Glu	Tyr	Leu	Asn	Ala	Asn	Gly	His	Arg	Lys	Thr	Pro	Glu
			20					25					30		
Arg	Tyr	Ala	Ile	Leu	Asp	Thr	Ile	Tyr	Ser	Ile	Asp	Gly	His	Phe	Asp
		35					40					45			
Ile	Asp	Met	Leu	Tyr	Ser	Gln	Met	Met	Asn	Gln	Glu	Asn	Phe	Arg	Val
	50					55					60				
Ser	Arg	Ala	Thr	Leu	Tyr	Asn	Thr	Ile	Ile	Leu	Leu	Ile	Asn	Ala	Arg
65					70					75					80
Leu	Val	Ile	Lys	His	Gln	Phe	Gly	Thr	Ser	Ser	Gln	Tyr	Glu	Lys	Ser
			85					90						95	
Tyr	Asn	Arg	Glu	Thr	His	His	His	Gln	Ile	Cys	Thr	Gln	Cys	Gly	Lys
			100					105					110		
Val	Thr	Glu	Phe	Gln	Asn	Glu	Ala	Leu	Gln	Asn	Ala	Ile	Glu	Asn	Thr
		115					120					125			
Lys	Leu	Ser	Lys	Phe	Gln	Leu	Ser	His	Tyr	Ser	Leu	Tyr	Ile	Tyr	Gly
	130					135						140			

Ile Cys Ser Lys Cys Asp Arg Ala Asn Lys Arg Lys Arg Val Asn Asn
 145 150 155 160
 Asn Asn Lys Lys Glu Lys
 165

<210> 7501

<211> 608

<212> PRT

<213> B.fragilis

<400> 7501

Lys Met Asn Glu Lys Tyr Gln Met Ile Gln Thr Leu Lys Thr Tyr Phe
 1 5 10 15
 Gly Tyr Asp Ser Phe Arg Pro Leu Gln Glu Glu Ile Ile His Asn Leu
 20 25 30
 Ile Ser Lys Lys Asp Ser Leu Val Leu Met Pro Thr Gly Gly Gly Lys
 35 40 45
 Ser Ile Cys Tyr Gln Leu Pro Ala Leu Leu Met Glu Gly Thr Ala Ile
 50 55 60
 Val Ile Ser Pro Leu Ile Ser Leu Met Lys Asp Gln Val Glu Thr Leu
 65 70 75 80
 Arg Ala Asn Gly Ile Pro Ala Gly Ala Leu Asn Ser Ser Asn Asp Glu
 85 90 95
 Thr Glu Asn Ala Asn Leu Arg Arg Ala Cys Ile Ser Gly Gln Leu Lys
 100 105 110
 Leu Leu Tyr Ile Ser Pro Glu Lys Leu Leu Ser Glu Ala Asp Tyr Leu
 115 120 125
 Leu Arg Asp Met Thr Leu Ser Leu Phe Ala Val Asp Glu Ala His Cys
 130 135 140
 Ile Ser Gln Trp Gly His Asp Phe Arg Pro Glu Tyr Ala Arg Met Gly
 145 150 155 160
 Phe Leu Arg Asn Gln Phe Pro Asn Val Pro Met Ile Ala Leu Thr Ala
 165 170 175
 Thr Ala Asp Lys Ile Thr Arg Glu Asp Ile Val Arg Gln Leu Gln Leu
 180 185 190
 Arg Gln Pro Gln Ile Phe Ile Ser Ser Phe Asp Arg Pro Asn Leu Ser
 195 200 205
 Leu Ser Val Lys Arg Gly Tyr Gln Pro Lys Glu Lys Ser Lys Ala Ile
 210 215 220
 Ile Asp Phe Ile Thr Arg His Arg Gly Glu Ser Gly Ile Val Tyr Cys
 225 230 235 240
 Met Ser Arg Ser Lys Thr Glu Thr Val Ala Gln Met Leu Gln Lys His
 245 250 255
 Gly Ile Arg Cys Gly Val Tyr His Ala Gly Leu Ser Ala Arg Gln Arg
 260 265 270
 Asp Glu Thr Gln Asp Asp Phe Ile Asn Asp Arg Ile Glu Val Val Cys
 275 280 285
 Ala Thr Ile Ala Phe Gly Met Gly Ile Asp Lys Ser Asn Val Arg Trp
 290 295 300
 Val Ile His Tyr Asn Leu Pro Lys Ser Ile Glu Ser Phe Tyr Gln Glu
 305 310 315 320
 Ile Gly Arg Ala Gly Arg Asp Gly Met Ala Ser Asp Thr Ile Leu Phe
 325 330 335
 Tyr Ser Leu Gly Asp Leu Ile Leu Leu Thr Lys Phe Ala Thr Glu Ser
 340 345 350
 Asn Gln Gln Asn Ile Asn Leu Glu Lys Leu Asn Arg Met Gln Gln Tyr
 355 360 365
 Ala Glu Ser Asp Ile Cys Arg Arg Arg Ile Leu Leu Ser Tyr Phe Gly
 370 375 380

Glu Thr Thr Thr Glu Asp Cys Gly Asn Cys Asp Val Cys Arg Asn Pro
 385 390 395 400
 Pro Glu Arg Phe Asp Gly Thr Ile Ile Val Gln Lys Ala Leu Ser Ala
 405 410 415
 Ile Ala Arg Thr Asn Gln Gln Val Ser Ile Thr Leu Leu Ile Asp Ile
 420 425 430
 Leu Arg Gly Asn Pro Thr Thr Glu Ile Thr Glu Lys Ala Tyr Thr Glu
 435 440 445
 Leu Lys Thr Phe Gly Ala Gly Arg Asp Ile Pro Ala Arg Asp Trp Gln
 450 455 460
 Asp Tyr Leu Leu Gln Met Leu Gln Met Gly Tyr Phe Glu Ile Ala Tyr
 465 470 475 480
 Asn Glu Asn Asn His Leu Lys Ile Thr Gly Ser Gly Ser Asp Val Leu
 485 490 495
 Phe Gly Arg Glu Arg Ala Met Leu Val Val Ile Arg Arg Glu Glu Pro
 500 505 510
 Ala Thr Ala Lys Arg Arg Lys Lys Ser Ala Ala Thr Pro Thr Gln Ala
 515 520 525
 Trp Ala Glu Glu Ser Arg Ser Lys Glu Glu Asp Leu Phe Glu Ala Leu
 530 535 540
 Arg Ala Leu Arg Lys Gln Leu Ala Asp Gln Glu Ala Leu Pro Ala Tyr
 545 550 555 560
 Ile Val Leu Ser Asp Lys Val Leu His Leu Leu Cys Leu Ser Arg Pro
 565 570 575
 Thr Thr Val Glu Ala Phe Gly Asn Ile Asn Gly Ile Gly Glu Tyr Lys
 580 585 590
 Lys Lys Lys Tyr Gly Lys Asp Phe Val Ala Leu Ile Arg Gln Phe Val
 595 600 605

<210> 7502

<211> 194

<212> PRT

<213> B.fragilis

<400> 7502

Arg Asn Met Glu Leu Asp Glu Leu Lys Gln Lys Trp Thr Glu Leu Ser
 1 5 10 15
 Glu Gln Val Glu Lys Asn Glu Leu Leu Asn Arg Gln Ile Ile Ile Asp
 20 25 30
 Met Ile Gln Ser Lys Lys Glu Thr His Leu Gln Gln Gln Leu Arg Val
 35 40 45
 Glu Lys Met Ala Phe Gly Val Leu Gly Ile Phe Leu Gly Ile Val Cys
 50 55 60
 Tyr Thr Phe Trp Arg Asn Val Ala Pro Gly Trp Ile Ser Trp Tyr Leu
 65 70 75 80
 Leu Gly Met Val Ile Trp Leu Leu Leu Met Gln Thr Leu Met Phe Arg
 85 90 95
 Ile Ile Tyr Thr Leu Lys Thr Val Thr Glu His Val Glu Gln Gln Tyr
 100 105 110
 Lys Arg Leu Gln Ser Tyr Lys Val Leu Met Asn Leu Thr Tyr Ile Phe
 115 120 125
 Ser Tyr Val Ile Ile Thr Pro Val Ile Ile Ala Phe Phe Tyr Ile Trp
 130 135 140
 His Asn Pro Leu Phe Arg Thr Val Leu Cys Val Met Ile Leu Ala Gly
 145 150 155 160
 Phe Leu Gly Asp Tyr Phe Ile Tyr His Lys Thr Gly Asp Arg Leu Lys
 165 170 175
 Gly Phe Arg Asp Ala Val Arg Ala Leu Gln Asp Leu Lys Ser Gly Lys
 180 185 190

Gln Glu

<210> 7503

<211> 395

<212> PRT

<213> B.fragilis

<400> 7503

Ser	Asp	Lys	Leu	Tyr	Ile	Arg	Tyr	Asn	Arg	Lys	Leu	Gly	Ser	Gly	Arg
1				5					10					15	
Leu	Arg	Ser	Met	Lys	Ile	Arg	Thr	Ala	Phe	Phe	Ile	Phe	Cys	Ile	Ser
			20					25					30		
Leu	Leu	Leu	Gly	Ala	Cys	Ser	Gln	Val	Ala	Thr	Glu	Ser	Arg	Val	Gln
			35				40					45			
Ser	Ile	Ser	Phe	Glu	Val	Gly	Ser	Ser	Met	Ile	Ala	Asp	Thr	Phe	Phe
			50			55					60				
Leu	Asp	Ser	Leu	Phe	Leu	Phe	Met	Pro	Glu	Thr	Asn	Glu	Glu	Ala	Leu
65					70					75				80	
Ile	Asn	Asn	Ile	Asp	Arg	Val	Tyr	Glu	Ser	Asn	Gly	Arg	Tyr	Phe	Ile
				85				90						95	
Leu	Asp	Lys	Arg	Met	Lys	Gln	Gly	Ala	Leu	Tyr	Thr	Leu	Phe	Gly	Lys
			100					105						110	
His	Leu	Phe	Thr	Ile	His	Ala	Val	Gly	Asn	Gly	Lys	Gly	Glu	Tyr	Val
			115				120					125			
Asp	Leu	Phe	Asp	Ile	Ala	Ile	Asp	Glu	Ala	Glu	Asn	Lys	Leu	Leu	Leu
			130			135					140				
Leu	Thr	Tyr	Pro	Ser	Gln	Ile	Leu	Tyr	Tyr	Asp	Leu	Glu	Gly	Thr	Tyr
145					150					155				160	
Leu	Ser	Ser	Tyr	Pro	Leu	Asp	Asp	Met	Tyr	Gln	Ser	Phe	Ala	Val	Asp
				165				170						175	
Lys	Gly	Phe	Ile	Tyr	Leu	Arg	Asn	Asp	Thr	Tyr	Ala	Asn	Gly	Val	Val
			180				185						190		
Ser	Asp	Tyr	Ser	Leu	Ile	Val	Ile	Asn	Lys	Glu	Thr	Gly	Lys	Gln	Thr
			195				200					205			
Ser	Leu	Leu	Glu	Pro	Leu	Tyr	Glu	Thr	Ala	Pro	Phe	Cys	Ser	Ser	Gly
			210			215					220				
Asn	Tyr	Gln	Ile	Thr	Asn	Thr	Ala	Ser	Val	Leu	Phe	Thr	Arg	Lys	Phe
225					230					235				240	
Asp	Asn	His	Ile	Tyr	Arg	Ile	Thr	Gly	Glu	Ser	Ile	Glu	Pro	Leu	Tyr
				245				250						255	
Met	Val	Asp	Trp	Lys	Asp	Lys	Ala	Phe	Pro	Glu	Ser	Asp	Lys	Gln	Arg
			260				265						270		
Gln	Phe	Gln	Cys	Asn	Asp	Leu	Asn	Gln	Phe	Cys	Tyr	Gln	Gly	Lys	Tyr
			275				280					285			
Val	Tyr	Thr	Met	Thr	Asp	Leu	Cys	Asp	Thr	Pro	Ser	Tyr	Leu	Leu	Phe
			290			295					300				
Arg	Thr	Asn	Gln	Pro	Gly	Met	Cys	Leu	Leu	Ser	Lys	Ala	Thr	Ser	Thr
305					310					315				320	
Val	Asn	Asn	Tyr	Gln	Val	Ile	Ile	Asn	Thr	Asp	Tyr	Gln	Leu	Pro	Leu
				325				330						335	
Pro	Asn	Tyr	Met	Ser	Val	Glu	Gly	Lys	Gln	Ser	Arg	Ile	Phe	Phe	Ile
			340				345						350		
Tyr	Ser	Ser	Glu	Val	Leu	Cys	Glu	Gln	Lys	Lys	Leu	Ser	Ala	Glu	Glu
			355				360					365			
Asp	Ile	Asn	Glu	Lys	Met	Ser	Ser	Leu	Leu	Gly	Gln	Ile	Lys	Glu	Gly
			370			375					380				
Asp	Asn	Pro	Val	Ile	Phe	Thr	Tyr	His	Val	Lys					
385					390					395					

<210> 7504
 <211> 624
 <212> PRT
 <213> B.fragilis

<400> 7504

Pro	Arg	Tyr	Trp	Asp	Asn	His	Ser	Leu	Lys	Arg	Ser	Arg	Thr	Tyr	Cys
1				5					10					15	
Glu	Leu	Thr	Glu	Leu	Lys	Thr	Gly	Lys	Val	Leu	Leu	Thr	Asn	Leu	Arg
			20					25					30		
Asp	Gly	Met	Arg	Trp	Met	Pro	Lys	Ser	Asn	Lys	Leu	Tyr	Tyr	Thr	Val
		35					40					45			
Val	Ala	Pro	Glu	Gly	Asn	Asp	Val	Ile	Thr	Leu	Asp	Pro	Val	Thr	Leu
	50				55						60				
Lys	Glu	Glu	Val	Leu	Leu	Arg	Gly	Ile	Pro	Glu	Gln	Gly	Phe	Ser	Trp
65					70					75					80
Ser	Pro	Asn	Glu	Asp	Phe	Leu	Ile	Tyr	Tyr	Pro	Arg	Glu	Glu	Gly	Val
				85					90					95	
Lys	Asp	Glu	Gly	Pro	Leu	Lys	Arg	Ile	Val	Ser	Pro	Ala	Asp	Arg	Ile
			100					105					110		
Pro	Asn	Thr	Arg	Gly	Arg	Ser	Phe	Leu	Ala	Arg	Tyr	Asp	Ile	Ala	Ser
		115					120					125			
Gly	Thr	Ser	Glu	Arg	Leu	Thr	Tyr	Gly	Asn	His	Ser	Thr	Tyr	Met	Gln
		130				135						140			
Asp	Ile	Ser	Pro	Asp	Gly	Lys	Tyr	Leu	Leu	Tyr	Ser	Ser	Ser	Lys	Glu
145					150					155					160
Asn	Ile	Thr	Gln	Arg	Pro	Phe	Ser	Leu	Ser	Ser	Leu	Phe	Gln	Val	Asn
			165						170					175	
Leu	Glu	Thr	Leu	Ala	Val	Asp	Thr	Leu	Phe	Phe	Glu	Asp	Arg	Phe	Leu
			180					185					190		
Gly	Gly	Ala	Ser	Tyr	Ser	Pro	Asp	Gly	Lys	Gln	Leu	Leu	Leu	Thr	Ala
		195					200					205			
Ser	Pro	Glu	Ala	Phe	Asp	Gly	Ile	Gly	Lys	Asn	Cys	Gly	Asn	His	Pro
		210				215					220				
Ile	Ala	Asn	Asp	Phe	Asp	Ser	Gln	Ala	Phe	Ile	Met	Asp	Leu	Ala	Thr
225					230					235					240
Arg	Lys	Ile	Asp	Pro	Ile	Thr	Lys	Glu	Phe	Asn	Pro	Ser	Val	Asn	Phe
			245						250					255	
Leu	Gln	Trp	Asn	Lys	Gly	Asp	Gly	Cys	Ile	Tyr	Phe	Ser	Thr	Asn	Asp
			260					265					270		
Glu	Asp	Cys	Arg	Asn	Ile	Tyr	Arg	Tyr	Ser	Pro	Lys	Asp	Arg	Lys	Phe
		275					280					285			
Glu	Lys	Leu	Asn	Leu	Glu	Thr	Asp	Val	Thr	Ser	Ala	Phe	Ala	Met	Ser
		290				295					300				
Glu	Asn	Asn	Pro	Ser	Leu	Ala	Ala	Tyr	Ile	Gly	Gln	Gly	Cys	Tyr	Asn
305					310					315					320
Ala	Gly	Val	Ala	Tyr	Val	Tyr	Asp	Leu	Lys	Lys	Lys	Thr	Ser	Arg	Leu
			325						330					335	
Ile	Ala	Asp	Pro	Met	Lys	Pro	Thr	Leu	Glu	Lys	Ile	Glu	Leu	Gly	Glu
			340					345					350		
Met	Lys	Pro	Trp	Asn	Phe	Thr	Ala	Ser	Asp	Gly	Thr	Glu	Ile	Lys	Gly
		355					360					365			
Met	Met	Cys	Leu	Pro	Pro	Ser	Phe	Asp	Pro	Asn	Lys	Lys	Tyr	Pro	Leu
		370				375					380				
Ile	Val	Tyr	Tyr	Tyr	Gly	Gly	Thr	Thr	Pro	Thr	Glu	Arg	Gly	Ile	Ser
385					390					395					400
Asn	Pro	Tyr	Cys	Ala	Gln	Leu	Phe	Ala	Ser	Arg	Asp	Tyr	Val	Val	Tyr
			405						410					415	

Val	Ile	Gln	Pro	Ser	Gly	Thr	Ile	Gly	Phe	Gly	Gln	Glu	Phe	Ser	Ala	
			420					425					430			
Arg	His	Val	Asn	Ala	Trp	Gly	Lys	Arg	Thr	Ala	Asp	Asp	Ile	Ile	Glu	
		435					440					445				
Gly	Thr	Lys	Gln	Phe	Cys	Lys	Glu	His	Pro	Phe	Val	Asn	Asp	Lys	Lys	
	450					455					460					
Ile	Gly	Cys	Leu	Gly	Ala	Ser	Tyr	Gly	Gly	Phe	Met	Thr	Gln	Tyr	Leu	
465					470					475					480	
Gln	Thr	Gln	Thr	Asp	Ile	Phe	Ala	Ala	Ala	Val	Ser	His	Ala	Gly	Ile	
				485					490						495	
Ser	Asn	Val	Thr	Ser	Tyr	Trp	Gly	Glu	Gly	Tyr	Trp	Gly	Tyr	Gly	Tyr	
			500					505					510			
Asn	Ala	Ile	Ala	Ala	Ala	Asp	Ser	Tyr	Pro	Trp	Asn	Asn	Pro	Glu	Leu	
		515					520					525				
Phe	Thr	Lys	Gln	Gly	Ser	Leu	Phe	Asn	Ala	Asp	Lys	Ile	Asn	Thr	Pro	
	530					535					540					
Leu	Leu	Leu	Leu	His	Gly	Thr	Val	Asp	Thr	Asn	Val	Pro	Ile	Gly	Glu	
545					550					555					560	
Ser	Ile	Gln	Leu	Phe	Asn	Ala	Leu	Lys	Ile	Leu	Gly	Lys	Thr	Val	Glu	
				565					570						575	
Phe	Ile	Thr	Val	Asp	Gly	Glu	Asn	His	Phe	Ile	Ala	Asp	Tyr	Pro	Lys	
			580					585					590			
Arg	Val	Gln	Trp	His	Asn	Ser	Ile	Met	Ala	Trp	Phe	Ala	Arg	Trp	Leu	
		595					600					605				
Gln	Asp	Ser	Pro	Gln	Trp	Trp	Glu	Asp	Met	Tyr	Pro	Glu	Arg	His	Leu	
	610					615					620					

<210> 7505

<211> 276

<212> PRT

<213> B.fragilis

<400> 7505

Lys	Asn	Cys	Trp	Met	Gly	Asp	Val	Thr	Leu	Thr	Ile	Val	Ala	Glu	Lys	
1				5					10					15		
Phe	Gln	Gln	Pro	Ala	Thr	Asp	Glu	Gly	Lys	Leu	Glu	Glu	Asn	Leu	Ser	
			20					25					30			
Thr	Arg	Ile	Asn	Ser	Ile	Arg	Tyr	Leu	Tyr	Lys	Asp	Asn	Val	Leu		
		35					40					45				
Ile	His	Ser	Gly	Ile	Ile	Asp	Asn	Val	Thr	Asp	Leu	Asn	Thr	Asp	Ala	
	50					55					60					
Tyr	Lys	Leu	Thr	Phe	Pro	Lys	Leu	Ala	Phe	Gly	Asp	Tyr	Cys	Leu	Ala	
65					70					75					80	
Leu	Ala	Thr	Asn	Val	Ser	Glu	Glu	Glu	Leu	Pro	Asp	Thr	Thr	Thr	Pro	
			85						90					95		
Glu	Ala	Leu	Asn	Leu	Asn	Tyr	Pro	Gly	Ile	Glu	Gln	Thr	Lys	Asp	Tyr	
			100					105					110			
Phe	Thr	Ser	Cys	Tyr	Asp	Phe	Thr	Val	Asp	Cys	Glu	Cys	Gly	Tyr	Gln	
		115					120					125				
Asp	Phe	Val	Ile	Leu	Arg	Arg	Thr	Gln	Gly	Val	Thr	Gln	Phe	Gln	Leu	
	130					135					140					
Lys	Gln	Leu	Pro	Glu	Asn	Ile	Thr	Gly	Ile	Gly	Ile	Glu	Ile	His	Lys	
145					150					155					160	
Val	Ala	Ala	Thr	Cys	Gln	Ile	Asp	Thr	Leu	Tyr	Lys	Gly	Glu	Thr	Ile	
				165					170					175		
Ala	Glu	Tyr	His	Thr	Thr	Val	Ala	Glu	Val	Thr	Asn	Ala	Glu	Glu	Val	
			180					185					190			
Ala	Asp	Phe	Ser	Ile	Gly	Thr	Phe	Pro	Thr	Ser	Gly	Pro	Glu	Asn	Ala	
		195					200					205				

Ser Ile Thr Leu Lys Leu Tyr Ala Asp Asp His Ser Gly Ser Pro Ile
 210 215 220
 Tyr Gln Lys Thr Leu Asn Asn Ile Ser Ile Leu Arg Asn Gln Leu Thr
 225 230 235 240
 Arg Ile Ser Thr Asp Phe Asn His Ser Ile Leu Gly Asn Ser Gly Phe
 245 250 255
 Ser Ile Ala Ile Asn Pro Asp Trp Asp Gly Ile His Asp Asp Asp Glu
 260 265 270
 Thr Ile Ile Pro
 275

<210> 7506
 <211> 273
 <212> PRT
 <213> B.fragilis

<400> 7506

Met Pro Asn Arg Phe Ser Arg Thr Leu Glu Ser Val Tyr Asp Asp Tyr
 1 5 10 15
 Ala Ala Ala Thr Met Ala Gly Leu Met Gly Lys Lys Glu Asp Ala Glu
 20 25 30
 Tyr Phe Gly Lys Arg Ser Glu Phe Tyr Lys Asn Leu Phe Asp Lys Glu
 35 40 45
 Thr Gln Phe Met Arg Pro Arg Tyr Ala Asp Gly Arg Trp Lys Thr Pro
 50 55 60
 Phe Asn Pro Ser Asp Leu Ala His Ala Glu Ser Arg Gly Gly Asp Tyr
 65 70 75 80
 Thr Glu Gly Asn Ala Trp Gln Tyr Thr Trp His Val Gln His Asp Val
 85 90 95
 Pro Gly Leu Ile Glu Leu Phe Gly Gly Lys Glu Val Phe Leu Asn Lys
 100 105 110
 Leu Asp Ser Leu Phe Thr Ile Glu Leu Lys Gly Ser Gly Leu Ala Asp
 115 120 125
 Val Thr Gly Leu Ile Gly Gln Tyr Ala His Gly Asn Glu Pro Ser His
 130 135 140
 His Val Thr Phe Leu Tyr Ala Leu Ala Gly Lys Pro Glu Arg Thr Gln
 145 150 155 160
 Glu Leu Ile Arg Glu Ile Phe Asp Thr Gln Tyr Lys Asn Lys Pro Asp
 165 170 175
 Gly Leu Cys Gly Asn Asp Asp Cys Gly Gln Met Ser Ala Trp Tyr Met
 180 185 190
 Phe Asn Ala Met Gly Phe Tyr Pro Val Asp Pro Val Ser Gly His Tyr
 195 200 205
 Val Phe Gly Ala Pro Gln Met Pro Lys Ile Val Leu His Leu Pro Asp
 210 215 220
 Gly Lys Thr Phe Thr Val Ile Ala Glu Asn Leu Ser Lys Glu His Lys
 225 230 235 240
 Tyr Ile Asp Ser Ile Thr Leu Asn Gly Glu Pro Tyr Thr Lys Asn Tyr
 245 250 255
 Ile Ser His Glu Asp Ile Val Lys Gly Gly Thr Leu Val Tyr Lys Met
 260 265 270
 Lys

<210> 7507
 <211> 345
 <212> PRT
 <213> B.fragilis

<400> 7507

Lys Lys Lys Leu Leu Ser Glu Thr Glu Ala Ala Phe Leu Leu Ala Thr
 1 5 10 15
 Ala Asp Ile Ala Trp Asn Ala Leu Ser Arg Leu Tyr Asn Cys Val His
 20 25 30
 Ser Tyr Ile Gln Ser Lys Thr Asn Leu Tyr Met Lys Thr His Leu Ile
 35 40 45
 Phe Leu Trp Phe Ile Thr Phe Gly Val Met Ala Cys Thr Ser Gln Pro
 50 55 60
 Gly Ile Asn Thr Gly Glu Asn Lys Val Glu Gly Asp Thr Ile Pro Val
 65 70 75 80
 Leu Asp Phe Ala Ser Ala Ile His Lys Gln Val Pro Asp Thr Phe Met
 85 90 95
 Trp Asn Ser Val Ala Arg Lys Ile Thr Tyr Ile Pro Leu Ala Ser Ser
 100 105 110
 His Leu Met Asp Gly His Pro Val Ile Glu Tyr Leu Asp Asp Asp Met
 115 120 125
 Cys Ile Ile Met Glu Gly Lys Ser Gln Trp Ile Asn Cys Val Asp Tyr
 130 135 140
 Lys Gly Asn Phe Leu Ser Thr Phe Arg His Val Gly Asn Gly Pro Gly
 145 150 155 160
 Glu Tyr Val Asn Leu Ser Ser Val Val Tyr His Ser Lys Asp Ser Thr
 165 170 175
 Ile Arg Ile Phe Asp Asn Gly Ser Tyr Lys His Ile Ile Tyr Asn Lys
 180 185 190
 Gln Gly Lys Phe Leu Arg Glu Ile Ser Leu Ala Asp Ser Glu Phe Asn
 195 200 205
 Tyr Leu Leu His Met Gln Ser Asp Thr Tyr Phe Phe Arg Gly Ser Phe
 210 215 220
 Ser Lys Gly Lys Ser Glu Ile Ile Val Thr Asp Thr Thr Leu Arg Val
 225 230 235 240
 Lys Phe Pro Ile Leu Pro Phe Asp Ser Thr Ala Asp Tyr Ile Thr Arg
 245 250 255
 Gly Ala Ile Met Leu Asn Thr Thr Gly Glu Glu Cys Ala Pro Asp Ile
 260 265 270
 Cys Leu Phe Asn His Ile Tyr Ser Asp Ser Val Phe Leu Leu Thr Pro
 275 280 285
 Asp Gly Leu Lys Leu Asp Phe Ile Leu Arg Lys Gly Lys Tyr Ala Pro
 290 295 300
 Ser Leu Glu Asp Val Lys Gln Phe Met Lys Trp Asn Gln Tyr Asp Pro
 305 310 315 320
 Phe Ile Lys Gly Leu Phe Ile Leu Lys Ser Ala Thr Ile Ile Gln Tyr
 325 330 335
 Thr Ile Lys Gly Arg Phe Met Ser Arg
 340 345

<210> 7508

<211> 389

<212> PRT

<213> B.fragilis

<400> 7508

Lys Ser Ile Arg Ile Phe Leu Pro Asn Pro Met Thr Met Lys Arg Tyr
 1 5 10 15
 Ile Arg Gln Ile Leu Leu Gly Thr Leu Leu Gly Ser Ala Cys Thr
 20 25 30
 Asn His Gln Glu Val Ile Glu Glu Asp Thr Ser Val Ser Val Val Phe
 35 40 45
 Lys Thr Arg Gln Leu Pro Ser Thr Lys Gly Glu Asn Asp Asp Glu Ile

50 55 60
 Ser Val Leu Ile Phe Arg Lys Glu Lys Asp Gln Phe Thr Lys Val Glu
 65 70 75 80
 Ser Ile Gln Glu Ser Pro Trp Leu Phe Glu Gln Glu Gln Leu Gln Lys
 85 90 95
 Asn Ile Leu Leu Pro Thr Gly Ile Tyr Arg Phe Leu Leu Ala Lys Gly
 100 105 110
 Phe Ser Asn Ser Pro Gly Asn Ser Gly Lys Ile Ser Phe Val Thr Asp
 115 120 125
 Asn Asn Pro Gly Asn Leu Val Ser Thr Ser Tyr Asp Arg Asn Tyr Tyr
 130 135 140
 Phe Gln Tyr Pro Thr Arg Thr Leu Asn Gly Gln Thr Glu Leu Asn His
 145 150 155 160
 Cys Thr Thr Ala Leu Phe Thr Asp Lys Asn Glu Glu Ser Ala Gln Asn
 165 170 175
 Ser Gln Thr Glu Tyr Asp Leu Ser Gln Thr Asn Arg Thr Leu Ile Ala
 180 185 190
 Arg Lys Ile Ser His Leu Gln Gly Gln Leu Cys Phe Ile Ile Gln Arg
 195 200 205
 Ala Lys Lys Glu Asn Gly Gln Tyr Thr Leu Ile Asp Ser Pro Glu Asn
 210 215 220
 Ser Phe Asp Asn Ala Leu Lys Lys Ile Ser Ala Ile Asn Leu Thr Ile
 225 230 235 240
 Glu Gly Ser Ser Gln Cys Cys Tyr Leu Ser Glu Thr Gly Leu Ile Phe
 245 250 255
 Lys Ser Pro Met Ser Tyr His Cys Leu Val Gln Leu Gln Asn Gly Asp
 260 265 270
 Tyr Ser Phe Lys Arg Phe Asp Ala Asp Gln Phe Val Ser Leu Phe Ser
 275 280 285
 Pro Ile Ile Glu Lys Thr Asp Tyr Gln Arg Tyr Glu Gly Ala Ala Tyr
 290 295 300
 Cys Glu Gly Pro Leu Leu Phe Pro Ala Pro Leu Asp Gln Thr Ile Arg
 305 310 315 320
 Val Thr Ile Asp Ile Asp Tyr Thr Gly Thr Leu Lys Asn Lys Thr Phe
 325 330 335
 Thr Leu Glu Asn Ile Pro Leu Glu Arg Asn Lys Met Tyr Leu Phe Thr
 340 345 350
 Leu Trp Leu Leu Asn Glu Asp Val Asp Ile Ser Ile Ser Pro Asp Ala
 355 360 365
 Asp Leu Asp Leu Glu Glu Leu Lys Phe Asn Asn Gln Ile Thr Gly Asn
 370 375 380
 Asp Gly Phe Trp Asn
 385

<210> 7509

<211> 506

<212> PRT

<213> B.fragilis

<400> 7509

Phe Ile Ser Arg Tyr Ser Phe Leu Ile Lys Asp Thr Val Ser Gly Gln
 1 5 10 15
 Asn His Leu His Ser His Ile Phe Ile Lys Ile Ile Leu Leu Pro Ile
 20 25 30
 Lys Tyr Glu Lys Ser Leu Phe Ser Leu Tyr Ile Thr Leu Ser His
 35 40 45
 Ile Ala Ser Val Arg Gly Lys Ser Val Ala Tyr Leu Ile Asn Lys Leu
 50 55 60
 Phe Ser Asn Tyr Phe Pro Glu Ala Leu Gln Ala Gln His Ser Tyr Phe

65					70					75				80	
Lys	Leu	Ile	Pro	Thr	Ser	Ser	Glu	Gly	Gly	Asp	Arg	Pro	Arg	Pro	Asp
				85					90					95	
His	Ser	Leu	Lys	Lys	Gln	Gln	Ile	Leu	Asn	Ile	Met	Lys	Ser	Phe	Lys
			100					105					110		
Ile	Met	Leu	Ile	Thr	Val	Leu	Ser	Val	Met	Thr	Leu	Ser	Cys	Ser	Glu
		115					120					125			
Lys	Thr	Thr	Thr	Glu	Ile	Pro	Glu	Thr	Glu	Leu	Lys	Asn	Ile	Ser	Cys
	130					135					140				
Ser	Thr	Gln	Leu	Val	Thr	His	Ser	Ser	Ala	Gln	Thr	Arg	Gly	Ala	Ala
145					150					155					160
Pro	Thr	Thr	Leu	Asn	Glu	Asn	Asp	Phe	Val	Leu	Tyr	Ala	Phe	Lys	Lys
				165					170					175	
Asn	Gly	Glu	Gly	Asn	Phe	Ser	Tyr	Glu	Glu	Ala	Lys	His	Glu	Thr	Ser
			180					185					190		
Val	Ile	Asp	Gly	Gly	Val	Trp	Lys	Tyr	Asn	Ala	Ala	Phe	Pro	Val	Gly
		195					200					205			
Thr	Tyr	Lys	Phe	Ile	Ala	Phe	Tyr	Asn	Leu	Asp	Glu	Lys	Asn	Gln	Ala
	210					215					220				
Ala	Leu	Asn	Thr	Thr	Ile	Thr	Gly	Ile	Ser	Asn	Gln	Thr	Trp	Glu	Asn
225					230					235					240
Ile	Leu	Lys	Ser	Ile	Val	Ile	Thr	His	Phe	Pro	Ser	Ala	Thr	Asp	Gln
				245					250					255	
Tyr	His	Glu	Asp	Met	Asn	Glu	Ile	Phe	Cys	Gly	Lys	Thr	Lys	Asp	Ala
			260					265					270		
Ile	Asp	Ile	Ser	Ser	Gly	Val	Gly	Gly	Asp	Asp	Asn	Glu	Ile	Lys	Ile
		275					280					285			
Lys	Leu	Thr	Leu	Glu	Arg	Ile	Val	Ser	Arg	Ile	Asp	Ile	Lys	Phe	Ile
	290					295					300				
Lys	Val	Ala	Ser	Asp	Asp	Asp	His	Ile	Glu	Val	Pro	Tyr	Ala	Thr	Gly
305					310					315					320
Asn	Ile	Phe	Gly	Gly	Thr	Gly	Thr	Thr	Ser	Leu	Thr	Ser	Leu	Ile	Phe
				325					330					335	
Thr	Ser	Ser	Asn	Val	Pro	Leu	Lys	Tyr	Asn	Leu	Asn	Gly	Glu	Asn	Pro
			340					345					350		
Asp	Tyr	Val	Thr	Gly	Val	Gln	Cys	Gln	Val	Thr	Tyr	Ala	Ala	Pro	Ser
		355					360					365			
Phe	Gln	Tyr	Gly	Glu	Ala	Asn	Ala	Asp	Ala	Val	Lys	Ala	Leu	Asp	Tyr
		370				375					380				
Gln	Pro	Phe	Pro	Lys	Asn	Ala	Asp	Ala	Ile	Asn	Asn	Asn	Met	Glu	Thr
385					390					395					400
Asn	Ile	Lys	Lys	Gly	Ile	Ala	Lys	Gly	Gly	Ala	Tyr	Phe	Met	Gly	Ser
				405					410					415	
Tyr	Leu	Leu	Pro	Phe	Pro	Ser	Ser	Ser	Gln	Thr	Leu	Asn	Ala	Asn	Ile
			420					425					430		
Gln	Leu	Asn	Lys	Ala	Asn	Gln	Glu	Arg	Thr	Ile	Lys	Val	Pro	Gly	Phe
		435					440					445			
Thr	Val	Thr	Ser	Asn	Tyr	Val	Ser	Ile	Ile	Thr	Val	Arg	Leu	Lys	Ser
	450					455					460				
Ser	Thr	Asp	Ala	Gly	Asp	Asn	Asn	Asn	Gly	Asn	Asp	Asp	Glu	His	Leu
465					470					475					480
Phe	Asn	Pro	Lys	Ser	Thr	Phe	Ile	Val	Glu	Ile	Glu	Lys	Thr	Tyr	Asp
				485					490					495	
Gly	Ile	His	Asn	Thr	Asn	Val	Asp	Val	Glu						
			500					505							

<210> 7510

<211> 375

<212> PRT

<213> B.fragilis

<400> 7510

Leu Arg Asn Arg Leu Glu Met Gly Leu Lys Asn Asn Asn Lys Asn Met
 1 5 10 15
 Met Lys Asn Lys Leu Leu Ser Ile Trp Ile Gly Cys Gly Ser Val Leu
 20 25 30
 Cys Ser Tyr Thr Ser Cys Ser Lys Glu Met Glu Phe Ile Asp Ser Pro
 35 40 45
 Asn Glu Gln Val Thr Ile Gln Leu Thr Thr Thr Ile Asp Gly Gln Gly
 50 55 60
 Phe Ser Thr Asp Asn Glu Ile Ile Pro Met Lys Thr Arg Ser Thr Arg
 65 70 75 80
 Ser Thr Asp Tyr Tyr Val Thr Ala Ile Tyr Asp Ser Arg Leu Val Ile
 85 90 95
 Ile Lys Glu Thr Gly Gln Ser Ala Trp Ser Ile Glu Lys Ile Glu Asp
 100 105 110
 Asn Val Ile Pro Gln Gly Tyr Ile Lys Ser Ser Asp Ala Cys Lys Tyr
 115 120 125
 Thr Met Gln Thr Thr Leu Arg Pro Gly Asn Tyr Lys Phe Met Leu Leu
 130 135 140
 Val Asn Gly Pro Lys Asn Glu Ala Leu His Leu Tyr Gln Asn Phe Ser
 145 150 155 160
 Glu Glu Asp Val Pro Trp Leu Thr Asp Thr Glu Lys Asp Tyr Ser Gly
 165 170 175
 Tyr Glu Ile Phe Phe Ala Thr Ser Gly Ile Val Thr Ile Lys Lys Thr
 180 185 190
 Asp Arg Leu Glu Glu Ser Gly Gln Tyr His Pro Leu Pro Thr Pro Leu
 195 200 205
 Val Leu Lys Arg Tyr Ser Ser Leu Ile Arg Leu Cys Ala Thr Gly Asp
 210 215 220
 Gly Phe Trp Gly Ser Leu Glu Arg Ala Thr Asp Ile Ser Tyr Ser Ile
 225 230 235 240
 Lys Glu Gln Ser Ile Asn Gly Ile Asn Leu Leu Gly Gln Ile Val Ser
 245 250 255
 Lys Asp Thr Glu Leu Ser Phe Gly Thr Leu Thr Ala Ser Ile Arg Lys
 260 265 270
 Asn Phe Glu Cys Gln Leu Gly Asp Lys Lys Leu Phe Phe Ser Tyr Phe
 275 280 285
 Gly Asp Glu Asp Glu Ala Lys Gln Leu Gln Asn Ile Leu Thr Pro Ser
 290 295 300
 Asp Gly Lys Asp Ile Thr Val Thr Ile Phe Gln Lys Glu Lys Gln Thr
 305 310 315 320
 Pro Pro Ile Glu Thr Thr Thr Gln Ala Lys Pro Asn Gln Val Thr Thr
 325 330 335
 Leu Ile Leu Asp Lys Thr Glu Ser Val Leu Asp Trp Asn Gln Pro Pro
 340 345 350
 Ile Ile Gly Thr Pro Ile Asp Trp Asp Pro Asp Asn Ile Pro Trp Gly
 355 360 365
 His Leu Glu Leu Asn Phe Leu
 370 375

<210> 7511

<211> 297

<212> PRT

<213> B.fragilis

<400> 7511

Leu Ile Cys Gly Met Asn Lys Glu Ile Leu Lys Arg Leu Leu Ala Lys

1	5	10	15
Pro Gly Glu Glu His Ser Val Ser Glu Phe Asp Ala Arg Tyr Thr Gly			
	20	25	30
Asp Leu Thr Lys Ser Glu Ala Glu Ala Leu Leu Ala Glu Asn Ile Gly			
	35	40	45
Lys Leu Ser Ser Leu Gln Asp Lys Leu Tyr Ala Gln Asp Arg Tyr Ala			
	50	55	60
Val Leu Val Ile Phe Gln Ala Met Asp Ala Ala Gly Lys Asp Gly Thr			
65	70	75	80
Ile Lys His Val Met Ser Gly Ile Asn Pro Gln Gly Cys Gln Val Tyr			
	85	90	95
Ser Phe Lys Gln Pro Ser Ala Glu Glu Leu Asp His Asp Tyr Leu Trp			
	100	105	110
Arg Ile Asn Arg Cys Leu Pro Glu Arg Gly Arg Ile Gly Ile Phe Asn			
	115	120	125
Arg Ser His Tyr Glu Asp Val Leu Val Ala Lys Val His Pro Glu Ile			
	130	135	140
Val Leu Ser Ala Lys Leu Pro Gly Ile Met Gly Pro Gly Asp Ile Thr			
145	150	155	160
Pro Lys Phe Trp Lys Lys Arg Tyr Arg Gln Ile Asn Asp Tyr Glu Arg			
	165	170	175
Tyr Leu Thr Glu Asn Gly Thr Val Ile Lys Phe Phe Leu Asn Val			
	180	185	190
Ser Lys Glu Gln Lys Arg Arg Phe Leu Ser Arg Leu Glu Asp Glu			
	195	200	205
Ala Lys Asn Trp Lys Phe Ser Val Ser Asp Leu Lys Glu Arg Ser Tyr			
	210	215	220
Trp Asp Asp Tyr Met Lys Ala Tyr Ser Asp Met Leu Thr His Thr Ser			
225	230	235	240
Thr Glu Glu Ala Pro Trp Tyr Val Ile Pro Ala Asp Asn Lys Trp Phe			
	245	250	255
Met Arg Tyr Ala Val Gly Gln Ile Leu Cys Asp Arg Met Asn Glu Leu			
	260	265	270
Asp Leu His Tyr Pro Glu Met Pro Val Glu Ala Arg His Gln Ile Glu			
	275	280	285
Asp Phe Lys Arg Ala Leu Leu Asn Glu			
	290	295	

<210> 7512

<211> 69

<212> PRT

<213> B.fragilis

<400> 7512

Ser Leu Phe Ile Tyr Ile Phe Val Asn Ala Asp Gly Gly Asp Arg Val			
1	5	10	15
Tyr Ser Lys Asn Ser Asn Thr Asn Gln Tyr Gly Pro Tyr Leu Ile Thr			
	20	25	30
Leu Arg Gly Gln Asn Val Phe Ala Tyr Arg Val Val Thr Glu Thr Ser			
	35	40	45
Cys Phe Gly Val Arg Val Ile Asn Cys Thr Ser Gly Ile Thr Glu Ser			
	50	55	60
Trp Val Pro Val Asp			
65			

<210> 7513

<211> 93

<212> PRT

<213> B.fragilis

<400> 7513

Lys	Val	Thr	Met	Asn	Ile	Lys	Pro	Leu	Ala	Asp	Arg	Val	Leu	Ile	Leu
1				5					10					15	
Pro	Ala	Pro	Ala	Glu	Glu	Lys	Thr	Ile	Gly	Gly	Ile	Ile	Ile	Pro	Asp
			20					25					30		
Thr	Ala	Lys	Glu	Lys	Pro	Leu	Lys	Gly	Glu	Val	Val	Ala	Val	Gly	His
		35					40					45			
Gly	Thr	Lys	Asp	Glu	Glu	Met	Val	Leu	Lys	Ala	Gly	Asp	Thr	Val	Leu
	50					55					60				
Tyr	Gly	Lys	Tyr	Ala	Gly	Thr	Glu	Leu	Glu	Val	Glu	Gly	Lys	Lys	Tyr
65					70					75					80
Leu	Ile	Met	Arg	Gln	Ser	Asp	Val	Leu	Ala	Val	Leu	Gly			
				85					90						

<210> 7514

<211> 422

<212> PRT

<213> B.fragilis

<400> 7514

Ile	Lys	Leu	Ile	Ser	Asn	Lys	Lys	His	Met	Lys	Thr	Ile	Thr	Leu	Ile
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Ile	Thr	Leu	Leu	Cys	Leu	Ser	Leu	Ser	Gly	Ile	Ala	Gln	Asn	Asn	Ala
			20					25					30		
Lys	Lys	Glu	Phe	Glu	Lys	Lys	Tyr	Gly	Ala	Leu	Val	Lys	Glu	Ile	Met
		35					40					45			
Asn	Val	Arg	Glu	Gln	Lys	Asp	Tyr	Lys	Lys	Ala	Glu	Lys	Leu	Asn	Trp
	50				55						60				
Glu	Ile	Leu	Lys	Leu	Tyr	Asp	Ala	Leu	Pro	Gln	Thr	Leu	Gln	Glu	Arg
65				70					75						80
Ala	Arg	Gln	Ile	Ala	Gly	Leu	Thr	Tyr	Tyr	Asp	Leu	Ala	Cys	Tyr	Gln
			85					90					95		
Ser	Leu	Gln	Gly	Lys	Lys	Lys	Ala	Ala	Leu	Asn	Asn	Leu	Glu	Lys	Ala
		100					105						110		
Phe	Ala	Asn	Gly	Trp	Ser	Asn	Tyr	Asn	His	Ala	Lys	Ser	Asp	Ser	Asp
	115						120					125			
Leu	Asp	Asn	Leu	Arg	Lys	Glu	Lys	Arg	Tyr	Leu	Glu	Val	Leu	Ser	Lys
	130				135						140				
Met	Arg	Leu	Asp	Ser	Asp	Tyr	Leu	Tyr	Ile	Leu	Gln	Gln	Ala	Asn	Gly
145					150					155					160
Tyr	Asn	Arg	Thr	Glu	Thr	Lys	Pro	Val	Cys	His	Asn	Glu	Ser	Leu	Thr
			165						170					175	
Asp	Thr	Leu	Pro	Arg	Phe	Thr	Tyr	Met	Asn	Pro	Asn	Asp	Ser	Asn	Leu
		180						185					190		
Val	Tyr	Leu	Arg	Lys	His	Phe	Asn	Leu	Asp	Ser	Ile	Ala	Gly	Ser	Gly
	195						200					205			
Asp	Glu	Ile	Ser	Lys	Ile	Lys	Asn	Leu	Leu	Tyr	Trp	Val	His	Asn	Ile
	210					215					220				
Val	Pro	His	Asp	Gly	Asn	Ser	Arg	Asn	Pro	Glu	Glu	Gln	Asn	Thr	Ile
225					230					235					240
Ala	Met	Val	Glu	Leu	Cys	Gln	Lys	Glu	Lys	Arg	Gly	Val	Asn	Cys	Arg
			245						250					255	
Met	Met	Ala	Gln	Met	Leu	Asn	Glu	Cys	Tyr	Leu	Ala	Met	Gly	Phe	Lys
		260						265					270		
Ser	Arg	Tyr	Ile	Thr	Cys	Met	Pro	Lys	Val	Met	Ile	Asn	Asp	Cys	His
		275					280					285			
Val	Ile	Asn	Ala	Val	Tyr	Ser	Asn	Thr	Leu	Asp	Lys	Trp	Leu	Trp	Met
	290					295						300			

Asp Pro Thr Phe Asn Ala Tyr Val Thr Asp Glu Lys Gly Asn Leu Leu
 305 310 315 320
 Gly Ile Gly Glu Val Arg Glu Arg Leu Arg Lys Asn Glu Pro Ile Val
 325 330 335
 Leu Asn Glu Asp Ala Asn Trp Asn Asn Lys Asn Lys Gln Thr Lys Glu
 340 345 350
 Tyr Tyr Leu Asp Tyr Tyr Met Ala Lys Asn Leu Tyr Tyr Val Thr Cys
 355 360 365
 Pro Leu Arg Ser Glu Tyr Asn Ala Glu Thr Asn Tyr Pro Gly Lys Lys
 370 375 380
 Trp Ser Met His Ile Ser Leu Val Pro Glu Gly Tyr Ser Thr Asn Gly
 385 390 395 400
 Lys Ser Gly Ala Thr Pro Tyr Asp Ser His Asn Asp Leu Tyr Phe Trp
 405 410 415
 Gln Ser Pro Tyr Gln Glu
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<210> 7515
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 <212> PRT
 <213> B.fragilis

<400> 7515

Tyr Phe Ile Ile Phe Ala Phe Asn Ile Leu Phe Met Asn Arg Lys Thr
 1 5 10 15
 Ile Met Ile Pro Phe Arg Glu Arg Glu Gly Val Arg Arg Lys Phe Leu
 20 25 30
 Phe Leu Leu Phe Ser Cys Leu Leu Ser Val Ser Leu Ser Ala Gln Thr
 35 40 45
 Tyr Gln Glu Leu Ser Glu Lys Ala Val Glu Cys Val Gly Lys Asp Ser
 50 55 60
 Leu Val Gln Ala Glu Asp Leu Leu Lys Gln Ala Leu Lys Leu Glu Pro
 65 70 75 80
 Lys Asn Ala His Asn Ala Leu Leu Phe Ser Asn Leu Gly Leu Val Gln
 85 90 95
 Arg Lys Leu Gly Arg Tyr Asn Asp Ala Val Glu Ser Tyr Thr Tyr Ala
 100 105 110
 Leu Asn Ile Ala Pro Leu Ala Val Pro Ile Leu Leu Asn Arg Ala Ala
 115 120 125
 Ile Tyr Leu Glu Gln Gly Met Gln Asp Lys Ala Tyr Val Asp Tyr Cys
 130 135 140
 Gln Val Met Asp Val Asp Lys Lys Asn Thr Glu Ala Leu Leu Met Arg
 145 150 155 160
 Ala Tyr Ile Tyr Met Leu Arg Arg Asp Tyr Lys Gly Ala Arg Leu Asp
 165 170 175
 Tyr Gln Arg Leu Leu Glu Ile Asp Pro Lys Asn Tyr Asn Gly Arg Leu
 180 185 190
 Gly Leu Ala Thr Leu Glu Gln Lys Glu Asn Lys Phe Arg Glu Ala Leu
 195 200 205
 Asp Ile Leu Asn Gln Leu Leu Val Glu Phe Pro Glu Asp Ala Val Leu
 210 215 220
 Tyr Val Ala Arg Ala Asp Val Glu Trp Asp Met Lys His Asp Asp Leu
 225 230 235 240
 Ala Leu Val Asp Leu Asp Glu Ala Ile Arg Leu Ala Pro Asp Ser Ile
 245 250 255
 Asp Ala Tyr Leu Leu Arg Gly Asp Ile Tyr Leu Asp Gln Lys Lys Lys
 260 265 270
 Ser Leu Ala Lys Ala Asp Phe Glu Lys Ala Ile Ser Leu Gly Val Pro
 275 280 285

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Pro Ala Asp Val His Glu Gln Met Gln Gln Cys Lys
 290 295 300

<210> 7516

<211> 386

<212> PRT

<213> B.fragilis

<400> 7516

Trp Asn Thr Met Ile Gly Leu Phe Asn Asp Cys Phe Pro Pro Ile Met
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 Asp Gly Val Ser Leu Thr Thr Gln Asn Tyr Ala Tyr Trp Leu His Arg
 20 25 30
 Lys Ala Gly Asn Val Cys Val Val Thr Pro Lys Ser Pro Asp Ala Arg
 35 40 45
 Asp Ala Glu Glu Tyr Pro Val Tyr Arg Tyr Ser Ser Val Pro Ile Pro
 50 55 60
 Met Arg Lys Pro Tyr Arg Leu Gly Phe Pro Arg Ile Asp Trp Pro Phe
 65 70 75 80
 His Glu Arg Ile Ser Arg Leu Ser Phe Glu Leu Val His Ala His Cys
 85 90 95
 Pro Phe Ser Ser Gly Ala Leu Ala Met Gln Ile Ala Lys Glu Gln His
 100 105 110
 Val Pro Ile Val Ala Thr Phe His Ser Lys Tyr Arg Ala Asp Phe Glu
 115 120 125
 Arg Ala Ile Pro Ser Arg Leu Leu Val Asn Tyr Leu Ile Lys Lys Val
 130 135 140
 Ile Arg Phe Tyr Glu Ala Ala Asp Glu Val Trp Ile Pro Gln Ala Ala
 145 150 155 160
 Val Glu Glu Thr Leu Arg Glu Tyr Gly Tyr Lys Gly Arg Ile Glu Val
 165 170 175
 Val Asp Asn Gly Asn Asp Phe Ala Gly Thr Pro Phe Leu Gln Ser Val
 180 185 190
 Arg Gln Glu Ala Arg Arg Thr Leu Gly Ile Arg Ser Gly Glu Phe Met
 195 200 205
 Phe Leu Phe Val Gly Gln His Ile Trp Glu Lys Asn Leu Gly Phe Leu
 210 215 220
 Leu Asp Ser Leu Val Arg Leu Ser Asp Ile Pro Phe Arg Met Tyr Phe
 225 230 235 240
 Val Gly Ser Gly Tyr Ala Ser His Glu Leu Lys Gln Lys Val Val Glu
 245 250 255
 Leu Gly Leu Ala Ser Lys Val Ser Phe Val Gly Ser Ile Val Glu Arg
 260 265 270
 Glu Ile Leu Lys Arg Tyr Tyr Val Ala Ala Asp Leu Phe Leu Phe Pro
 275 280 285
 Ser Leu Tyr Asp Asn Ala Pro Leu Val Ile Arg Glu Ala Ala Ala Leu
 290 295 300
 Gly Thr Pro Ser Val Leu Ile Arg Asp Ser Thr Ala Ser Glu Ile Ile
 305 310 315 320
 Ser Asp Ser Val Asn Gly Phe Leu Ser Pro Asn Ser Thr Glu Ala Tyr
 325 330 335
 Ser Asn Arg Ile Arg Glu Ile Leu Cys Ser Thr Ala Ile Ile Lys Gln
 340 345 350
 Val Gly Glu Glu Ala Ser Arg Thr Ile Ala Arg Ser Trp Glu Asp Val
 355 360 365
 Ala Gly Glu Val Tyr Asp Arg Tyr Asn Arg Leu Ile Lys Arg Asn Gly
 370 375 380
 Asn Lys
 385

[illegible]

Lys 1	Arg	Lys	Met	Lys 5	Val	Asp	Val	Leu	Leu 10	Gly	Leu	Gln	Trp	Gly 15	Asp
Glu	Gly	Lys	Gly	Lys	Val	Val	Asp	Val	Leu	Thr	Pro	Lys	Tyr	Asp	Val
Val	Ala	Arg	Phe	Gln	Gly	Gly	Pro	Asn	Ala	Gly	His	Thr	Leu	Glu	Phe
Glu	Gly	Gln	Lys	Tyr	Val	Leu	Arg	Ser	Ile	Pro	Ser	Gly	Ile	Phe	Gln
Gly	Asp	Lys	Val	Asn	Ile	Ile	Gly	Asn	Gly	Val	Val	Leu	Asp	Pro	Ala
Leu	Phe	Lys	Ala	Glu	Ala	Glu	Ala	Leu	Glu	Ala	Ser	Gly	His	Asn	Leu
Lys	Glu	Arg	Leu	His	Ile	Ser	Lys	Lys	Ala	His	Leu	Ile	Leu	Pro	Thr
His	Arg	Ile	Leu	Asp	Ala	Ala	Tyr	Glu	Ala	Ala	Lys	Gly	Asp	Ala	Lys
Val	Gly	Thr	Thr	Gly	Lys	Gly	Ile	Gly	Pro	Thr	Tyr	Thr	Asp	Lys	Val
Ser	Arg	Asn	Gly	Val	Arg	Val	Gly	Asp	Ile	Leu	His	Asn	Phe	Glu	Gln
Lys	Tyr	Ala	Ala	Ala	Lys	Ala	Arg	His	Glu	Gln	Ile	Leu	Lys	Gly	Leu
Asn	Tyr	Glu	Tyr	Asp	Leu	Thr	Glu	Leu	Glu	Lys	Ala	Trp	Phe	Glu	Gly
Ile	Glu	Tyr	Leu	Lys	Gln	Phe	Gln	Leu	Val	Asp	Ser	Glu	His	Glu	Ile
Asn	Gly	Leu	Leu	Asp	Asn	Gly	Lys	Ser	Ile	Leu	Cys	Glu	Gly	Ala	Gln
Gly	Thr	Met	Leu	Asp	Ile	Asp	Phe	Gly	Ser	Tyr	Pro	Phe	Val	Thr	Ser
Ser	Asn	Thr	Val	Cys	Ala	Gly	Ala	Cys	Thr	Gly	Leu	Gly	Val	Ala	Pro
Asn	Lys	Ile	Gly	Asp	Val	Tyr	Gly	Ile	Phe	Lys	Ala	Tyr	Cys	Thr	Arg
Val	Gly	Ser	Gly	Pro	Phe	Pro	Thr	Glu	Leu	Phe	Asp	Lys	Thr	Gly	Asp
Gln	Ile	Cys	Thr	Leu	Gly	His	Glu	Phe	Gly	Ser	Val	Thr	Gly	Arg	Lys
Arg	Arg	Cys	Gly	Trp	Val	Asp	Leu	Val	Ala	Leu	Lys	Tyr	Ser	Ile	Met
Val	Asn	Gly	Val	Thr	Lys	Leu	Ile	Met	Met	Lys	Ser	Asp	Val	Leu	Asp
Thr	Phe	Glu	Thr	Ile	Lys	Ala	Cys	Val	Ala	Tyr	Lys	Met	Asn	Gly	Glu
Glu	Ile	Asp	Tyr	Phe	Pro	Tyr	Asp	Ile	Thr	Asp	Glu	Val	Glu	Pro	Ile
Tyr	Val	Glu	Leu	Pro	Gly	Trp	Gln	Thr	Asp	Met	Thr	Lys	Met	Gln	Ser
Glu	Asp	Glu	Phe	Pro	Glu	Glu	Phe	Asn	Ala	Tyr	Leu	Ser	Phe	Leu	Glu
Glu	Gln	Leu	Gly	Val	Gln	Ile	Lys	Ile	Val	Ser	Val	Gly	Pro	Asp	Arg

Glu Gln Thr Ile Ile Arg Tyr Thr Glu Glu
420 425

<210> 7518

<211> 457

<212> PRT

<213> B.fragilis

<400> 7518

Asn	Glu	Ala	Phe	Leu	Pro	Pro	Ser	Leu	Ser	Gly	Glu	Ala	Arg	Ser	Glu
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Ala	Phe	Leu	Phe	Ile	Ile	Leu	Met	Lys	Lys	His	Phe	Ile	Thr	Phe	Leu
			20					25					30		
Leu	Leu	Val	Gly	Met	Thr	Ala	Ser	Leu	Thr	Ala	Gln	Gln	Lys	Tyr	Gln
		35					40				45				
Pro	Thr	Glu	Ala	Asn	Leu	Lys	Ala	Arg	Ser	Glu	Phe	Gln	Asp	Asn	Lys
	50					55					60				
Phe	Gly	Ile	Phe	Leu	His	Trp	Gly	Leu	Tyr	Ala	Met	Leu	Ala	Thr	Gly
65					70					75				80	
Glu	Trp	Thr	Met	Thr	Asn	Asn	Asn	Leu	Asn	Tyr	Lys	Glu	Tyr	Ala	Lys
				85					90					95	
Leu	Ala	Gly	Gly	Phe	Tyr	Pro	Ser	Lys	Phe	Asp	Ala	Asp	Lys	Trp	Val
			100					105					110		
Ala	Ala	Ile	Lys	Ala	Ser	Gly	Ala	Lys	Tyr	Ile	Cys	Phe	Thr	Thr	Arg
		115					120					125			
His	His	Glu	Gly	Phe	Ser	Met	Phe	Asp	Thr	Lys	Tyr	Ser	Asp	Tyr	Asn
		130				135					140				
Ile	Val	Lys	Ala	Thr	Pro	Phe	Lys	Arg	Asp	Val	Val	Lys	Glu	Leu	Ala
145					150					155				160	
Asp	Ala	Cys	Ala	Lys	His	Gly	Ile	Lys	Leu	His	Phe	Tyr	Tyr	Ser	His
			165						170					175	
Ile	Asp	Trp	Tyr	Arg	Glu	Asp	Ala	Pro	Gln	Gly	Arg	Thr	Gly	Arg	Arg
			180					185					190		
Thr	Gly	Arg	Pro	Asn	Pro	Lys	Gly	Asp	Trp	Lys	Ser	Tyr	Tyr	Gln	Phe
		195				200						205			
Met	Asn	Asn	Gln	Leu	Thr	Glu	Leu	Leu	Thr	Asn	Tyr	Gly	Pro	Ile	Gly
	210				215						220				
Ala	Ile	Trp	Phe	Asp	Gly	Trp	Trp	Asp	Gln	Asp	Ile	Asn	Pro	Asp	Phe
225					230				235					240	
Asp	Trp	Glu	Leu	Pro	Glu	Gln	Tyr	Ala	Leu	Ile	His	Arg	Leu	Gln	Pro
			245						250					255	
Ala	Cys	Leu	Val	Gly	Asn	Asn	His	His	Gln	Thr	Pro	Phe	Ala	Gly	Glu
		260					265						270		
Asp	Ile	Gln	Ile	Phe	Glu	Arg	Asp	Leu	Pro	Gly	Glu	Asn	Thr	Ala	Gly
		275				280					285				
Leu	Ser	Gly	Gln	Ser	Val	Ser	His	Leu	Pro	Leu	Glu	Thr	Cys	Glu	Thr
	290					295					300				
Met	Asn	Gly	Met	Trp	Gly	Tyr	Lys	Ile	Thr	Asp	Gln	Asn	Tyr	Lys	Ser
305					310					315				320	
Thr	Lys	Thr	Leu	Ile	His	Tyr	Leu	Val	Lys	Ala	Ala	Gly	Lys	Asp	Ala
			325						330					335	
Asn	Leu	Leu	Met	Asn	Ile	Gly	Pro	Gln	Pro	Asp	Gly	Glu	Leu	Pro	Glu
		340					345						350		
Val	Ala	Val	Gln	Arg	Leu	Lys	Glu	Val	Gly	Glu	Trp	Met	Ser	Lys	Tyr
		355				360					365				
Gly	Glu	Thr	Ile	Tyr	Gly	Thr	Arg	Gly	Gly	Leu	Val	Ala	Pro	His	Asp
	370					375					380				
Trp	Gly	Val	Thr	Thr	Gln	Lys	Gly	Asn	Lys	Leu	Tyr	Val	His	Ile	Leu
385					390					395					400

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<212> PRT
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<210> 7520
<211> 504
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210		215		220
Gln Pro Thr Thr Ser	Ile Met Lys Tyr Pro	Lys Lys Thr Gln His Leu		
225	230	235	240	
Pro Ser Ile Pro Gly	Ser Leu Lys Lys Ala Gly	Tyr Asp Leu Gln Tyr		
245	250	255		
Tyr Tyr Gly Gly Asp	Ala Asp Phe Thr Asn Met Arg	Ser Tyr Leu Ile		
260	265	270		
Gln Ala Gly Ile Asp	Asn Ile Val Ser Asp Lys Asp	Phe Pro Leu Ser		
275	280	285		
Glu Arg Leu Ser Lys	Trp Gly Ala His Asp His	Val Val Phe Asn Arg		
290	295	300		
Leu Leu Asp Asp Leu	Lys Gln His Thr Pro Gln	Lys Pro Phe Met Lys		
305	310	315	320	
Ile Leu Gln Thr Ser	Ser Ser His Glu Pro Phe	Glu Val Pro Phe Arg		
325	330	335		
Arg Leu Glu Asn Pro	Arg Leu Asn Ala Phe Ala	Tyr Ala Asp Ser Cys		
340	345	350		
Ala Gly Asp Phe Val	Arg Gln Phe Lys Glu Thr	Pro Leu Trp Lys Asn		
355	360	365		
Thr Val Ile Val Leu	Val Pro Asp His Leu Gly	Ala Tyr Pro Gln Asp		
370	375	380		
Ile Asp Asn Leu Thr	Val Asp Arg Tyr Arg Ile	Pro Leu Ile Phe Ile		
385	390	395	400	
Gly Gly Ala Val Lys	Glu Pro Arg Gln Ile Gly	Thr Tyr Gly Ser Gln		
405	410	415		
Ile Asp Ile Ala Thr	Leu Leu Gly Gln Leu Gly	Leu Pro His Glu		
420	425	430		
Glu Phe Ile Phe Ser	Lys Asn Met Leu Asn Pro	Asn Ser Pro His Phe		
435	440	445		
Gly Phe Phe Thr Phe	Pro Asn Ala Phe Gly Met	Met Thr Pro Glu Asn		
450	455	460		
Glu Val Val Phe Asn	Cys Glu Ser Asn Ser Ile	Val Ser Asp Glu Gly		
465	470	475	480	
Thr His Lys Gly Glu	Asn Leu Pro Lys Ala Lys	Ala Tyr Leu Gln Lys		
485	490	495		
Leu Tyr Asp Asp Leu	Ala Lys Arg			
500				

<210> 7521

<211> 221

<212> PRT

<213> B.fragilis

<400> 7521

Leu Met Asp Val Lys	Glu Gln Leu Lys Asp	Ile Lys Thr Gln Leu Arg
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Leu Ser Met Asn Gly	Val Val Ser Gln Ser	Met Arg Glu Lys Gly Leu
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Asp Tyr Lys Leu Asn	Phe Gly Val Glu Leu	Pro Arg Ile Lys Ser Ile
35	40	45
Ala Ala Ala Tyr Glu	Lys Ser His Asp Leu	Ala Gln Ala Leu Trp Lys
50	55	60
Glu Asn Ile Arg Glu	Cys Lys Ile Leu Ala	Gly Leu Leu Gln Pro Ile
65	70	75
Asp Thr Phe Phe Pro	Glu Ile Ala Asp Ile	Trp Val Glu Asp Ile Arg
85	90	95
Asn Ile Glu Ile Ala	Glu Leu Thr Cys Met	Asn Leu Phe Gln Asn Leu
100	105	110
Pro Tyr Ala Pro Ala	Lys Thr Phe Gln Trp	Ile Ala Asp Glu Ala Glu

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<210> 7522
<211> 474
<212> PRT
<213> B.fragilis
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Phe	Ile	Lys	Val	Ile	Ala	Met	Lys	Phe	Lys	Ser	Thr	Phe	Met	Thr	Ala
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Cys	Leu	Gly	Ile	Gly	Leu	Cys	Thr	Ser	Cys	Thr	Pro	Glu	Thr	Pro	Thr
			20					25					30		
Ala	Pro	Gln	Asp	Tyr	Thr	Gln	Tyr	Val	Asn	Thr	Phe	Ile	Gly	Ala	Ala
		35					40					45			
Asp	Asn	Gly	His	Thr	Phe	Pro	Gly	Ala	Cys	Leu	Pro	Phe	Gly	Leu	Ile
	50					55					60				
Gln	Ala	Ser	Pro	Glu	Thr	Asn	Ala	Ile	Gly	Trp	Gln	Tyr	Cys	Ser	Gly
65					70					75					80
Tyr	Asn	Tyr	Gln	Asp	Ser	Leu	Ile	Trp	Gly	Phe	Ser	Gln	Thr	His	Leu
				85					90					95	
Asn	Gly	Thr	Gly	Cys	Met	Asp	Leu	Gly	Asp	Leu	Leu	Val	Met	Pro	Val
			100					105					110		
Thr	Gly	Gln	Arg	Val	Arg	Asp	Asp	Tyr	Lys	Ser	Gly	Phe	Ser	Lys	Lys
		115					120					125			
Thr	Glu	Ser	Ala	Thr	Pro	Gly	Tyr	Tyr	Thr	Val	Glu	Leu	Asp	Lys	Tyr
	130					135					140				
Lys	Val	Lys	Ala	Glu	Leu	Thr	Ala	Thr	Asp	His	Val	Ala	Leu	His	Arg
145					150					155					160
Tyr	Thr	Tyr	Gln	Asn	Ala	Asp	Ser	Ala	Ser	Leu	Leu	Leu	Asp	Leu	Gln
				165					170					175	
His	Gly	Leu	Val	Trp	Asn	Pro	Gln	Gln	Tyr	Lys	Ser	His	Val	Lys	Ala
			180					185					190		
Cys	Glu	Ile	Asn	Trp	Glu	Asp	Ala	Gln	Thr	Leu	Thr	Gly	His	Val	Arg
		195					200					205			
Ser	Ser	Val	Trp	Val	Asn	Gln	Asp	Leu	Tyr	Phe	Val	Met	Lys	Phe	Asn
	210					215					220				
Lys	Pro	Val	Thr	Asp	Ser	Ile	Tyr	Leu	Pro	Met	Glu	Glu	Thr	Glu	Lys
225					230					235					240
Gly	Lys	Arg	Leu	Ile	Met	Ser	Phe	Asp	Met	Lys	Pro	Asp	Glu	Gln	Leu
				245					250					255	
Leu	Met	Lys	Val	Ala	Ile	Ser	Thr	Val	Gly	Val	Asp	Gly	Ala	His	Lys
			260					265					270		
Asn	Met	Glu	Lys	Glu	Leu	Ala	Asp	Trp	Asp	Phe	Asp	Gly	Thr	Arg	Gln
		275					280					285			
Lys	Ala	Lys	Asp	Ser	Trp	Asn	Ser	Tyr	Leu	Ser	Arg	Ile	Glu	Val	Thr
	290					295					300				
Gly	Thr	Pro	Asp	Glu	Leu	Glu	Asn	Phe	Tyr	Thr	Ser	Phe	Tyr	His	Ala

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

305 310 315 320
 Leu Ile Gln Pro Asn Asn Ile Ala Asp Val Asp Gly Arg Tyr Arg Asn
 325 330 335
 Ala Lys Asp Ser Ile Val Lys Ser Ser Ser Gly Val Tyr Tyr Ser Thr
 340 345 350
 Phe Ser Ile Trp Asp Thr Tyr Arg Ala Ala His Pro Phe Tyr Thr Leu
 355 360 365
 Ala Val Pro Glu Arg Val Asp Gly Phe Ile Asn Ser Met Ile Glu Gln
 370 375 380
 Asn Gln Ala Gln Gly Tyr Leu Pro Val Trp Thr Leu Trp Gly Lys Glu
 385 390 395 400
 Thr Asn Thr Met Ile Gly Asn His Ser Val Ser Val Ile Ala Glu Ala
 405 410 415
 Tyr Lys Lys Gly Phe Arg Gly Phe Asp Ala Glu Lys Ala Phe Asp Ala
 420 425 430
 Ile Lys Gln Thr Leu Thr Val Ser His Pro Lys Ser Asp Trp Glu Thr
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 Tyr Met Lys Tyr Gly Tyr Tyr Pro Thr Asp Lys Val Asp Ala Glu Ser
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 Val Phe Thr Tyr Pro Arg Ile Gly Leu Arg
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<212> PRT

<213> B.fragilis

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 20 25 30
 Gln His Ala Gly Thr Gln Arg Asp Thr Val Pro Val Thr Phe Pro Val
 35 40 45
 Gln His Leu Glu Glu Val Val Ile Thr Ala Gly Arg Pro Gly Ile Thr
 50 55 60
 Ala Gly Ala Val Ser Asn Arg Ile Ser Ser Ser Glu Ile His Arg Val
 65 70 75 80
 Ala Gly Ser Ser Leu Ala Thr Leu Leu Glu Arg Ile Ser Gly Val Ser
 85 90 95
 Ser Leu Ser Thr Gly Thr Thr Val Ser Lys Pro Val Ile His Gly Met
 100 105 110
 His Gly Asn Arg Ile Leu Ile Ile Asn Asn Gly Ala Arg Gln Thr Gly
 115 120 125
 Gln Gln Trp Ala Thr Asp His Ala Pro Glu Val Asp Ile Asn Glu Ser
 130 135 140
 Gly Asn Ile Leu Val Ile Lys Gly Ala Asp Gly Val Arg Tyr Gly Ser
 145 150 155 160
 Asp Ala Leu Gly Gly Ile Ile Val Met Glu Gln Pro Pro Leu Ala Phe
 165 170 175
 Gly Gln Glu His Pro Lys Gly Arg Ile Ala Thr Phe Tyr Gly Ser Asn
 180 185 190
 Gly His Arg Tyr Ala Ala Thr Gly Ser Leu Glu Gly Thr Leu Pro Phe
 195 200 205
 Leu Arg Asn Ile Ala Trp Arg Met Gln Gly Thr Tyr Ser Asn Ser Gly
 210 215 220
 Asp Arg Ser Thr Ala His Tyr Leu Leu Asn Asn Thr Gly Thr Arg Gly
 225 230 235 240
 Leu His Phe Ser Ala Ser Ala Gly Tyr Asp Ser Gly Arg Leu Arg Ile

245							250							255		
Glu	Gly	Ile	Tyr	Ser	His	Phe	Gly	Glu	Gln	Thr	Gly	Val	Met	Phe	Gly	
			260							265				270		
Ala	Gln	Met	Gly	Ser	Glu	Asp	Leu	Leu	Ala	Glu	Arg	Ile	Arg	Leu	Gly	
			275				280							285		
Arg	Pro	Val	Tyr	Thr	Asp	Pro	Phe	Thr	Arg	His	Ile	Ser	Tyr	Pro	Tyr	
			290				295							300		
Gln	Lys	Val	Val	His	Arg	Thr	Ala	Ile	Gly	Lys	Val	Arg	Tyr	Asn	Ala	
305							310							315		
Gly	Ala	Ala	Gly	Val	Phe	Tyr	Trp	Gln	Thr	Ser	Trp	Gln	Lys	Asp	Asp	
			325							330						
Arg	Arg	Glu	Asn	Arg	Ile	Arg	Arg	Met	Asn	His	Ser	Asp	Ile	Pro	Ala	
			340							345						
Val	Ala	Leu	Leu	Leu	Ser	Ser	Ile	Gln	Asn	Thr	Phe	Arg	Trp	Lys	Leu	
			355				360							365		
Asp	Tyr	Gly	Pro	Trp	Gln	Thr	Glu	Ile	Gly	Gly	Gln	Met	Ile	Phe	Thr	
			370				375							380		
Asp	Asn	His	Ser	Lys	Ala	Gly	Thr	Gly	Ile	Val	Pro	Val	Ile	Pro	Asn	
385							390							395		
Tyr	Thr	Glu	Met	Gln	Ala	Gly	Ala	Tyr	Gly	Ile	Gln	Lys	Tyr	Arg	Tyr	
			405							410						
Glu	Arg	Thr	Ala	Val	Glu	Ala	Gly	Ile	Arg	Leu	Asp	Arg	Gln	Glu	Thr	
			420							425						
Arg	Ala	Gly	Gly	Tyr	Asp	Trp	Thr	Gly	Asn	Tyr	Tyr	Gly	Gly	Asn	Arg	
			435							440						
Lys	Phe	Cys	Asn	Phe	Thr	Tyr	Gly	Leu	Gly	Gly	His	Tyr	Arg	Leu	Ser	
			450				455							460		
Lys	Tyr	Trp	Glu	Leu	Thr	Ser	Asn	Phe	Ala	Leu	Thr	Trp	Arg	Ala	Pro	
465							470							475		
His	Val	His	Glu	Leu	Tyr	Ser	Asn	Gly	Asn	Glu	Leu	Gly	Ser	Gly	Met	
			485							490						
Phe	Val	Arg	Gly	Asp	Ala	Ser	Met	Asn	Ala	Glu	Arg	Ser	His	Lys	Trp	
			500							505						
Ile	Thr	Ser	Val	Ser	Tyr	Arg	Asp	Lys	Val	Phe	His	Ile	Arg	Leu	Asp	
			515							520						
Ser	Tyr	Leu	Gln	Trp	Ile	Lys	Gly	Tyr	Ile	Tyr	Asp	Glu	Pro	Leu	Lys	
			530				535							540		
Glu	Asn	Ile	Thr	Val	Ile	Ser	Gly	Thr	Tyr	Pro	Val	Phe	Arg	Tyr	Arg	
545							550							555		
Gln	Thr	Pro	Ala	Phe	Arg	Gly	Ala	Asp	Phe	Asp	Phe	Arg	Phe	Met		
			565							570						
Pro	Ala	Ala	Ser	Trp	Glu	Tyr	His	Leu	Ile	Ala	Ser	Phe	Ile	Arg	Ala	
			580							585						
Asn	Glu	Gln	Gly	Thr	Gly	Asn	Tyr	Leu	Pro	Tyr	Ile	Pro	Ser	Phe	His	
			595				600							605		
Leu	Ser	His	Glu	Leu	Ala	Trp	Thr	His	Gln	Thr	Lys	Ser	His	Ile	Leu	
			610				615							620		
Phe	Arg	Leu	Thr	Ala	Arg	His	Lys	Phe	Val	Ala	Lys	Gln	Asn	Arg	Phe	
625							630							635		
Asn	Pro	Ala	Thr	Asp	Leu	Ile	Pro	Tyr	Thr	Pro	Pro	Ala	Tyr	His	Leu	
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 <212> PRT
 <213> B.fragilis

<400> 7524

Ser	Ile	Ile	Ser	Tyr	Asn	Phe	Ala	Thr	Gln	Phe	Asn	Lys	Thr	Val	Arg
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Thr	Met	Ala	Ala	Lys	Pro	Gly	Ile	Pro	Lys	Gly	Thr	Arg	Asp	Phe	Ser
			20					25					30		
Pro	Val	Glu	Met	Ala	Lys	Arg	Asn	Tyr	Ile	Phe	Asn	Thr	Ile	Arg	Asp
		35					40					45			
Val	Tyr	His	Leu	Tyr	Gly	Phe	Gln	Gln	Ile	Glu	Thr	Pro	Ser	Met	Glu
	50					55					60				
Met	Leu	Ser	Thr	Leu	Met	Gly	Lys	Tyr	Gly	Glu	Glu	Gly	Asp	Lys	Leu
65					70					75					80
Leu	Phe	Lys	Ile	Gln	Asn	Ser	Gly	Asp	Tyr	Phe	Ser	Gly	Ile	Thr	Asp
				85				90						95	
Glu	Glu	Leu	Leu	Ser	Arg	Asn	Ala	Ala	Lys	Leu	Ala	Ser	Lys	Phe	Cys
			100					105					110		
Glu	Lys	Gly	Leu	Arg	Tyr	Asp	Leu	Thr	Val	Pro	Phe	Ala	Arg	Tyr	Val
		115					120						125		
Val	Met	His	Arg	Asp	Glu	Ile	Thr	Phe	Pro	Phe	Lys	Arg	Tyr	Gln	Ile
	130					135					140				
Gln	Pro	Val	Trp	Arg	Ala	Asp	Arg	Pro	Gln	Lys	Gly	Arg	Tyr	Arg	Glu
145					150					155					160
Phe	Tyr	Gln	Cys	Asp	Ala	Asp	Val	Val	Gly	Ser	Asp	Ser	Leu	Leu	Asn
				165					170					175	
Glu	Val	Glu	Leu	Met	Gln	Ile	Val	Asp	Thr	Val	Phe	Thr	Arg	Phe	Gly
			180					185					190		
Ile	Arg	Val	Cys	Ile	Lys	Ile	Asn	Asn	Arg	Lys	Ile	Leu	Thr	Gly	Ile
		195					200					205			
Ala	Glu	Ile	Ile	Gly	Glu	Ala	Asp	Lys	Ile	Val	Asp	Ile	Thr	Val	Ala
	210					215					220				
Ile	Asp	Lys	Leu	Asp	Lys	Ile	Gly	Leu	Asp	Asn	Val	Asn	Lys	Glu	Leu
225					230					235					240
Ala	Glu	Lys	Gly	Ile	Ser	Glu	Glu	Ala	Ile	Ala	Lys	Leu	Gln	Pro	Ile
				245					250					255	
Ile	Leu	Leu	Ser	Gly	Thr	Asn	Ala	Glu	Lys	Leu	Ala	Thr	Leu	Lys	Thr
			260					265					270		
Val	Leu	Ser	Asp	Ser	Glu	Thr	Gly	Leu	Lys	Gly	Val	Glu	Glu	Ser	Glu
		275					280					285			
Phe	Ile	Leu	Asn	Thr	Leu	Gln	Thr	Met	Gly	Leu	Lys	Asn	Glu	Ile	Glu
	290					295					300				
Leu	Asp	Leu	Thr	Leu	Ala	Arg	Gly	Leu	Asn	Tyr	Tyr	Thr	Gly	Ala	Ile
305					310					315				320	
Phe	Glu	Val	Lys	Ala	Leu	Asp	Val	Gln	Ile	Gly	Ser	Ile	Thr	Gly	Gly
				325					330					335	
Gly	Arg	Tyr	Asp	Asn	Leu	Thr	Gly	Val	Phe	Gly	Met	Ala	Gly	Val	Ser
			340					345					350		
Gly	Val	Gly	Ile	Ser	Phe	Gly	Ala	Asp	Arg	Ile	Phe	Asp	Val	Leu	Asn
		355					360					365			
Gln	Leu	Glu	Leu	Tyr	Pro	Lys	Glu	Ala	Val	Asn	Gly	Thr	Gln	Leu	Leu
	370					375					380				
Phe	Ile	Asn	Phe	Gly	Glu	Lys	Glu	Ala	Ala	Phe	Ser	Met	Gly	Ile	Leu
385					390					395					400
Ser	Lys	Ala	Arg	Ala	Val	Gly	Ile	Arg	Ala	Glu	Ile	Phe	Pro	Asp	Ala
				405					410					415	

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Ala Lys Met Lys Lys Gln Met Ser Tyr Ala Asn Val Lys Asn Ile Pro
 420 425 430
 Phe Val Ala Ile Val Gly Glu Asn Glu Met Asn Glu Gly Lys Ala Met
 435 440 445
 Leu Lys Asn Met Glu Ser Gly Glu Gln Gln Leu Val Thr Ala Glu Glu
 450 455 460
 Leu Ile Gly Ala Leu Thr Lys
 465 470

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<211> 359

<212> PRT

<213> B.fragilis

<400> 7525

Thr Gly Thr Ser Asp Tyr Asp Phe Tyr Ser Leu Tyr Asn Ile Asn Lys
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 20 25 30
 Leu Leu Thr Gly Ala Phe Leu Val Leu Leu Phe Asn Ser Cys Thr Lys
 35 40 45
 Asp Pro Val Ile Pro Glu Asp Glu Thr Lys Asn Lys Leu His Glu Asp
 50 55 60
 Pro Ala Lys Val Thr Val Arg Leu Val Glu Cys His Leu His Ala Asp
 65 70 75 80
 Trp Asn Glu Ile Gln Thr Asn Gly Gly Pro His Gln Asn Pro Glu Ser
 85 90 95
 Pro Ala Arg His Ile Lys Arg Ile Gln Asp Ile Thr Tyr Glu Leu Lys
 100 105 110
 Ala Gly Gln Gly Trp Thr Leu Ala Glu Gly Ser Gln Lys Lys Phe Tyr
 115 120 125
 Val Gln Lys Asn Gly Glu Tyr Lys Asn Gln Gly Arg Phe Thr Pro Ala
 130 135 140
 Pro Val Tyr Leu Met Phe Ile Tyr Tyr Tyr Asn Ala Lys Gly Glu Leu
 145 150 155 160
 Met Asn Asn Gln Phe Val Glu Asn Gly Gln Glu Asn Ile His Gln His
 165 170 175
 Phe Phe Thr Pro Glu Asn Ile Lys Pro Thr Phe Asp Gly Gln Ile Glu
 180 185 190
 Ala Asp Asp Asn Asp Pro Gln Lys Leu Ile Asp Tyr Leu Tyr Val Asp
 195 200 205
 Thr Thr Pro Trp Asp Lys Thr Tyr His Ser Gly Glu Ala Glu Ile Thr
 210 215 220
 Gly Arg Asp Asn Pro Val Gly Leu Lys Gly Ile Ile Arg Phe Leu Lys
 225 230 235 240
 Asp Arg Lys Glu Phe Asp Leu Lys Val Arg Leu Tyr His Gly Tyr Glu
 245 250 255
 Ser Lys Lys Asn Pro Gln Thr Gly Thr Phe Asp Pro Phe Tyr Lys Pro
 260 265 270
 Ser Gly Val Leu Ile Gln Arg Gly Thr Trp Asp Ile Asn Leu Asn Leu
 275 280 285
 Pro Val Val Val Phe Trp Ser Arg Glu Glu Phe Ile Asp Ile Asp Glu
 290 295 300
 Glu Ala Asn Leu Glu Lys Val Gly Glu Asp Ser Leu Asp Glu Gly Ser
 305 310 315 320
 Asn Arg Thr Val His Ser Ile Met Glu Thr Phe Asn Leu Thr Trp Lys
 325 330 335
 Glu Ala Leu Glu Glu Phe Ile Thr Tyr Thr Tyr Lys Ala Gly Asp Ala
 340 345 350

114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Glu Gly Gly Ala Ile Trp Leu
355

<210> 7526
<211> 158
<212> PRT
<213> B.fragilis

<400> 7526
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Pro Lys Lys Arg Pro Tyr Asn Leu Arg Glu Lys Lys Glu Lys Lys Ala
20 25 30
Ala Tyr Arg Ser Leu Ile Arg Pro Glu Leu Ala Asp Glu Leu Tyr Asp
35 40 45
Arg Ile Leu Asn Ile Ile Val Val Gln Lys Lys Tyr Arg Asp Pro Asp
50 55 60
Tyr Ser Ala Lys Asp Leu Ala Lys Glu Leu Lys Thr Asn Thr Arg Tyr
65 70 75 80
Leu Ser Ala Val Val Asn Ser Arg Phe Gly Met Asn Tyr Ser Cys Leu
85 90 95
Leu Asn Glu Tyr Arg Val Lys Asp Ala Leu His Leu Leu Thr Asp Lys
100 105 110
Arg Tyr Ala Asp Lys Asn Val Glu Ile Ser Ala Met Val Gly Phe
115 120 125
Ala Asn Arg Gln Ser Phe Tyr Ala Ala Phe Tyr Lys Asn Val Gly Glu
130 135 140
Thr Pro Asn Gly Tyr Arg Lys Lys His Ala Glu Lys Lys Lys
145 150 155

<210> 7527
<211> 303
<212> PRT
<213> B.fragilis

<400> 7527
Ser Val Asn Pro Ala Tyr Glu Glu Arg Ala Asn Asn Val Arg Pro Val
1 5 10 15
Arg Ser Asn Arg Asp Asn Arg Thr Asn Gln Gln Trp Leu Glu Lys Ala
20 25 30
Leu Lys Lys Ala Ser Gln Ala Asp Val Ile Val Ala Ala Leu Gly Glu
35 40 45
Ser Ser Lys Met Ser Gly Glu Ser Ser Ser Arg Thr Asn Phe Asn Leu
50 55 60
Arg Asn Val Gln His Thr Leu Leu Glu Ala Leu Leu Lys Thr Gly Lys
65 70 75 80
Pro Val Val Leu Val Leu Phe Thr Gly Arg Pro Leu Val Leu Asn Trp
85 90 95
Glu Gln Glu His Val Pro Ala Ile Leu Asn Val Trp Phe Gly Gly Ser
100 105 110
Glu Ala Gly Pro Ala Ile Gly Asp Val Leu Phe Gly Ala Val Asn Pro
115 120 125
Gly Gly Lys Leu Thr Met Thr Phe Pro Lys Ser Val Gly Gln Ile Pro
130 135 140
Leu Tyr Tyr Ala His Lys Asn Thr Gly Arg Pro Leu Lys Glu Gly Lys
145 150 155 160
Trp Phe Glu Lys Phe Arg Ser Asn Tyr Leu Asp Val Asp Asn Asp Ala
165 170 175
Leu Tyr Pro Phe Gly Tyr Gly Leu Ser Tyr Thr Thr Phe Arg Phe Ser

	180		185		190	
Asp	Ile Thr Leu Asn Arg Ser Ser	Ile Gly Met Asp Asn Glu Leu Val				
	195		200		205	
Ala	Ser Val Thr Val Thr Asn Thr	Gly Asp Arg Ala Gly Ser Glu Val				
	210		215		220	
Val	Gln Leu Tyr Ile Arg Asp Leu Val	Gly Ser Val Thr Arg Pro Val				
225		230		235		240
Lys	Glu Leu Lys Gly Phe Glu Lys Ile Tyr Leu Gln Pro Asn Glu Ser					
	245		250		255	
Arg	Thr Val Arg Phe Thr Ile Ala Pro Glu Met Leu Lys Phe Tyr Asn					
	260		265		270	
Ala	Asp Leu Lys Phe Val Ala Glu Pro Gly Asp Phe Asp Val Met Ile					
	275		280		285	
Gly	Pro Asp Ser Arg Asn Val Lys Thr Ala Arg Phe Thr Leu Arg					
	290		295		300	

<210> 7528

<211> 66

<212> PRT

<213> B.fragilis

<400> 7528

Ser	Phe Val Tyr Ser Ile Leu Arg Glu Asn His Leu Cys Gly Thr Leu					
1		5		10		15
Cys	Asp Ser Val Val Asn Leu Ile Leu Phe Tyr Ser Leu Val Tyr Pro					
	20		25		30	
Val	Gln Arg Asn Val Asn Arg Ala Val Phe Thr Phe Arg Leu Ser Gly					
	35		40		45	
Pro	Ile Ile Thr Ser Lys Ser Pro Gly Ser Ala Thr Asn Phe Lys Ser					
	50		55		60	
Ala	Leu					
65						

<210> 7529

<211> 102

<212> PRT

<213> B.fragilis

<400> 7529

Leu	Glu Pro Phe Gly Leu Leu Phe Gly Lys Lys Gly Leu Asp Thr Arg					
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Ile	Lys Asn Lys Leu Asp Ile Arg Ile Lys Met Lys Lys Val Lys Lys					
	20		25		30	
Ser	Thr Trp Val Thr Val Ala Leu Leu Ile Tyr Val Ser Ala Thr Ala					
	35		40		45	
Ala	Tyr Leu Leu Pro Arg Asn His Glu Val Ser Asp Thr Glu Lys Tyr					
	50		55		60	
Leu	Thr Leu Ala Ala Ser Tyr Val Ile Val Leu Val Leu Trp Leu Val					
65		70		75		80
Leu	Arg Lys Lys Glu Gln Met Gln Gln Arg Arg Arg Glu Glu Glu His					
	85		90		95	
Met	Asn Asn Leu Lys Lys					
	100					

<210> 7530

<211> 707

<212> PRT

<213> B.fragilis

<400> 7530

Lys Val Tyr Leu Ile Phe Ile Leu Leu Thr Leu Ile Phe Arg Cys Met
 1 5 10 15
 Lys Gln Val Asn Leu Arg Val Cys Arg Met Ile Leu Pro Leu Leu Phe
 20 25 30
 Gly Leu Phe Leu Ser Leu Ser Ala Tyr Ala Gln Gln Val Ser Val Lys
 35 40 45
 Gly His Val Lys Asp Ser Thr Gly Glu Pro Val Ile Gly Ala Asn Val
 50 55 60
 Val Val Lys Asp Asn Ser Ile Gly Thr Ile Thr Asp Leu Asn Gly
 65 70 75 80
 Asn Phe Val Leu Ser Val Pro Gln Asn Ser Thr Leu Val Ile Ser Phe
 85 90 95
 Ile Gly Tyr Lys Pro Val Glu Met Lys Ala Ala Pro Ser Val Thr Val
 100 105 110
 Thr Leu His Glu Asp Ala Val Met Leu Gln Glu Ala Val Val Ile Gly
 115 120 125
 Tyr Gly Thr Val Lys Lys Asn Asp Val Thr Gly Ser Val Met Ala Ile
 130 135 140
 Asp Ala Asp Arg Met Val Lys Gly Met Ala Thr Ser Ala Ser Asp Leu
 145 150 155 160
 Leu Val Gly Lys Ala Ala Gly Val Ser Val Ile Thr Asp Gly Gly Ala
 165 170 175
 Pro Gly Ala Gly Ala Thr Ile Arg Val Arg Gly Gly Ser Ser Met Ser
 180 185 190
 Ala Ser Asn Asp Pro Leu Ile Val Ile Asp Gly Val Pro Val Asp Asn
 195 200 205
 Thr Glu Ile Lys Gly Met Gly Asn Pro Leu Ser Thr Val His Pro Asn
 210 215 220
 Asp Ile Glu Thr Phe Thr Ile Leu Lys Asp Ala Ser Ala Thr Ala Ile
 225 230 235 240
 Tyr Gly Ser Arg Ala Ser Asn Gly Val Ile Ile Ile Thr Thr Lys Lys
 245 250 255
 Gly Gln Ser Gly Arg Val Lys Val Asp Tyr Ser Gly Thr Phe Ser Ile
 260 265 270
 Ser Thr Lys Ser Asn Thr Val Asp Val Met Lys Ala Glu Asp Phe Arg
 275 280 285
 Asn Phe Val Ile Glu Lys Phe Gly Glu Asn Ser Leu Gln Ala Asn Ala
 290 295 300
 Leu Gly Lys Thr Ser Thr Asp Trp Gln Asp Glu Ile Phe Arg Thr Ala
 305 310 315 320
 Phe Ser Thr Asp His Asn Val Ser Val Ser Gly Ala Val Pro His Met
 325 330 335
 Pro Tyr Arg Val Ser Val Ala Tyr Thr Asn Glu Asn Gly Ile Leu Lys
 340 345 350
 Thr Ser Asn Met Gln Arg Leu Thr Gly Ala Ile Asn Leu Asn Pro Asn
 355 360 365
 Phe Phe Asp Lys Lys Leu Asn Ile Gln Leu Asn Val Lys Gly Val Tyr
 370 375 380
 Asn Lys Asn Arg Phe Ala Asp Arg Ala Ala Ile Gly Leu Ala Thr Gln
 385 390 395 400
 Tyr Asp Pro Thr Gln Pro Val Tyr Met Glu Gly Asn Pro Tyr Gly Asn
 405 410 415
 Gly Tyr Phe Met Tyr Met Lys Gln Glu Gly Asp Lys Ala Ser Pro Ile
 420 425 430
 Asp Ile Gly Leu Ala Asn Pro Val Ala Met Leu Glu Glu Lys Asp Asp
 435 440 445
 Thr Ser Thr Val Tyr Arg Ser Ile Gly Asn Ala Gln Ile Asp Tyr Lys
 450 455 460

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460

Phe His Phe Leu Pro Glu Leu Arg Ala Asn Leu Asn Leu Gly Tyr Asp
 465 470 475 480
 Val Ser Lys Ser Lys Gly Asp Val Ile Ile Ala Asp Asn Ser Pro Leu
 485 490 495
 Thr Tyr Cys Thr Gly Asn Phe Lys Asn Gly Phe Gly Glu Asn Ser His
 500 505 510
 Tyr Thr Gln Leu Lys Arg Asn Thr Leu Leu Asp Phe Tyr Leu Asn Tyr
 515 520 525
 Ala Asn Thr Phe Gly Val Asn Tyr Ile Asp Val Met Ala Gly Tyr Ser
 530 535 540
 Trp Gln His Phe Tyr Asn Ser Thr Thr Asn Ser Tyr Pro Tyr Ser Ala
 545 550 555 560
 Ala Tyr Ala Glu Lys Thr Gly Glu Glu Phe Tyr Lys Lys Gly Asp Asp
 565 570 575
 Tyr Ala Ser Glu Ser Tyr Leu Val Ser Phe Phe Gly Arg Leu Asn Tyr
 580 585 590
 Thr Leu Leu Asn Arg Tyr Leu Val Thr Phe Thr Leu Arg Asn Asp Gly
 595 600 605
 Ser Ser Arg Phe Ser Pro Asp Asn Arg Trp Gly Leu Phe Pro Ser Val
 610 615 620
 Ala Leu Ala Trp Lys Leu Asn Glu Glu Ser Phe Leu Lys Asn Val Asn
 625 630 635 640
 Ala Ile Ser Asp Leu Lys Leu Arg Leu Gly Tyr Gly Val Thr Gly Gln
 645 650 655
 Gln Asn Leu Gly Asn Gly Asp Tyr Pro Tyr Met Ala Arg Tyr Met Tyr
 660 665 670
 Ser Lys Ala Gly Ala Asn Tyr Tyr Phe Gly Asp Thr Glu Tyr Ser Leu
 675 680 685
 Ile Ala Pro Gln Pro Tyr Asp Gln Asn Leu Glu Gly Glu Lys Thr Thr
 690 695 700
 Pro Gly Thr
 705

<210> 7531
 <211> 1335
 <212> PRT
 <213> B.fragilis

<400> 7531
 Arg Ile Pro Ala Cys Met Lys Lys Ile Leu Phe Leu Leu Leu Leu Leu
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 Pro Leu Met Val Ser Ala Gln Thr Tyr Lys Tyr Ile Gly Val Glu Asp
 20 25 30
 Gly Leu Ser Asn Arg Arg Val Tyr Tyr Ile Gln Lys Asp Lys Lys Gly
 35 40 45
 Tyr Met Trp Phe Leu Thr His Glu Gly Val Asp Arg Tyr Asp Gly Lys
 50 55 60
 Glu Phe Lys Arg Tyr Lys Leu Met Asp Asp Gly Glu Glu Leu Asn Ser
 65 70 75 80
 Leu Leu Asn Leu Asn Trp Leu Tyr Leu Asp His Glu Ser Thr Leu Trp
 85 90 95
 Glu Ile Gly Lys Lys Gly Lys Val Phe Arg Tyr Asp Pro Leu Arg Asp
 100 105 110
 Gln Phe Thr Leu Val Tyr Lys Leu Pro Glu Glu Lys Ile Lys Asp Arg
 115 120 125
 Pro Ala Pro Ile Ser Tyr Ser Phe Ile Asp Arg Asn Asn Asn Ile Trp
 130 135 140
 Leu Cys Asn Glu Glu Thr Leu Tyr Leu Tyr Asn Thr His Thr Leu Gln
 145 150 155 160

Thr Leu Gln Ile Lys Asn Glu Ile Gly Glu Asp Ile Thr Asp Ile Glu
 165 170 175
 Gln Ile Asp Asp Thr His Phe Phe Ile Gly Thr Glu Gln Gly Ile His
 180 185 190
 His Ala Glu Leu Lys Asn Gln Gly Leu His Leu Leu Pro Cys Asp Lys
 195 200 205
 Leu Asp Asn Leu Pro Ile Gln Ile Asn Glu Leu Tyr Phe His Arg Pro
 210 215 220
 Ser Arg Lys Leu Phe Ile Gly Thr Phe Glu Arg Gly Ile Tyr Val Tyr
 225 230 235 240
 Asp Met Asn Thr Lys Gln Ser Thr Gln Pro His Met Ser Leu Thr Asp
 245 250 255
 Val Ser Ile Thr Arg Ile Lys Pro Leu Asn Asn Lys Glu Leu Leu Val
 260 265 270
 Ala Thr Asp Gly Ala Gly Val Tyr Lys Ile Asn Ile Asn Ser Tyr Leu
 275 280 285
 Thr Thr Pro Tyr Ile Val Ala Asp Tyr Asn Gln Tyr Asn Glu Met Asn
 290 295 300
 Gly Asn Asn Ile Ser Asp Phe Tyr Val Asp Asp Glu Gln Arg Ile Trp
 305 310 315 320
 Leu Ala Asn Tyr Pro Ile Gly Ile Thr Val Arg Asn Asn Arg His Ser
 325 330 335
 Ser Tyr Asn Trp Ile Lys His Ser Ile Gly Asn Lys Gln Ser Leu Ile
 340 345 350
 Asn Asp Gln Val Asn Ser Ile Ile Glu Asp Ser Glu Arg Asp Leu Trp
 355 360 365
 Tyr Ala Thr Asn Asn Gly Ile Ser Tyr Tyr Asn Ser Glu Thr Gly Val
 370 375 380
 Trp His Ser Phe Met Ser Ser Phe Glu Lys Asn Gly Gly Asn Lys Asn
 385 390 395 400
 His Ile Phe Val Thr Leu Cys Glu Val Glu Pro Gly Ile Ile Trp Ala
 405 410 415
 Ala Gly Tyr Ser Ser Gly Ile Tyr Gln Ile Asn Lys Arg Thr Leu Ser
 420 425 430
 Val Glu Tyr Ile Thr Pro Ser Ser Leu Tyr Gly Val Asn Ile Arg Pro
 435 440 445
 Asp Lys Tyr Ile Arg Ser Ile Ile Lys Thr Ala Asp Gly Asp Ile Trp
 450 455 460
 Ser Gly Gly Tyr Tyr Asn Leu Lys Arg Ile Asp Phe His Lys Lys Thr
 465 470 475 480
 Leu Arg Leu Tyr Pro Lys Leu Asn Ser Ile Thr Ser Ile Met Glu Lys
 485 490 495
 Asp Ser Lys Gln Met Trp Ile Gly Thr Ala Thr Gly Leu Tyr Leu Leu
 500 505 510
 Glu Lys Glu Ser Gly Lys Tyr Gln Arg Ile Glu Leu Pro Val Glu Ser
 515 520 525
 Met Tyr Ile Tyr Ser Leu Tyr Gln Ala Arg Asn Gly Leu Leu Tyr Ile
 530 535 540
 Gly Thr Ser Gly Ser Gly Leu Leu Ile Tyr Asp Pro Glu Lys Arg Thr
 545 550 555 560
 Phe Thr His Tyr His Arg Asp Asn Cys Ala Leu Ile Ser Asn Asn Ile
 565 570 575
 Tyr Thr Ile Leu Ser Asp Thr Asp Asp Ile Ile Met Ser Thr Glu
 580 585 590
 Asn Gly Leu Ser Ser Tyr Tyr Pro Ala Glu Lys Leu Phe His Asn Trp
 595 600 605
 Thr Lys Asp Gln Gly Leu Met Ala Ser His Phe Asn Ala Gly Ser Gly
 610 615 620
 Thr Leu Arg Lys Asn Gly Asn Phe Ile Phe Gly Ser Ser Asp Gly Ala

165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555 560
 565 570 575
 580 585 590
 595 600 605
 610 615 620

625		630		635		640
Ile Glu Phe Asn Lys	Glu Met Lys Ile	Pro Arg Lys Tyr	Ser Ser Lys			
	645	650	655			
Met Val Leu Ser Asp	Leu Thr Ile Phe	Tyr Gln Thr Val	Tyr Pro Gly			
	660	665	670			
Asp Glu Asn Ser Pro	Leu Ser Thr Asp	Ile Asp Asp Thr	Lys Glu Leu			
	675	680	685			
Glu Leu Ser Tyr Ser	Gln Asn Ile Phe	Ser Leu Lys Val	Ser Ser Ile			
	690	695	700			
Asn Tyr Asp Tyr Pro	Ser Asn Ile Leu	Tyr Ser Trp Lys	Leu Glu Gly			
705	710	715	720			
Phe Tyr Asp Gln Trp	Ser Arg Pro Gly	Asn Glu Asn Ile	Ile Arg Phe			
	725	730	735			
Thr Asn Leu Ser Pro	Gly Glu Tyr Thr	Leu His Ile Arg	Ala Val Ser			
	740	745	750			
Asn Glu Asp Lys Arg	Ile Val Leu Glu	Glu Arg Thr Met	Lys Ile Ser			
	755	760	765			
Ile Ala Gln Pro Ile	Trp Leu Ser Phe	Trp Ala Met Leu	Val Tyr Ala			
	770	775	780			
Ile Val Leu Ala Val	Ile Ala Ile Ile	Thr Leu Arg Ile	Ile Ile Leu			
785	790	795	800			
Arg Lys Gln Arg Lys	Val Ser Asp Glu	Lys Ile His Phe	Phe Ile Asn			
	805	810	815			
Thr Ala His Asp Ile	Arg Thr Pro Leu	Thr Leu Ile Lys	Ala Pro Leu			
	820	825	830			
Glu Glu Ile Arg Glu	Arg Glu Ala Leu	Thr Lys Asp Gly	Ile Ser Asn			
	835	840	845			
Met Asn Thr Ala Leu	Arg Asn Val Asn	Ala Leu Leu Arg	Leu Thr Thr			
	850	855	860			
Asn Leu Ile Asn Phe	Glu Arg Ala Asp	Val Tyr Ser Ser	Glu Leu Tyr			
865	870	875	880			
Ile Ser Glu Tyr Glu	Leu Asn Thr Tyr	Leu Thr Glu Thr	Phe Asn Ala			
	885	890	895			
Phe Arg Pro Tyr Ala	Ser Val Lys His	Ile Asn Phe Thr	Tyr Glu Ser			
	900	905	910			
Asn Phe Arg Tyr Leu	Asn Val Trp Ile	Asp Lys Glu Lys	Met Asp Ser			
	915	920	925			
Ile Leu Lys Asn Ile	Ile Ser Asn Ala	Leu Lys Tyr Thr	Pro Glu Asn			
	930	935	940			
Gly Ser Val His Ile	Tyr Ala Ser Glu	Thr Asn Asp Ser	Trp Asn Val			
945	950	955	960			
Glu Val Asn Asp Thr	Gly Ile Gly Ile	Pro Ala Asn Glu	Gln Lys Lys			
	965	970	975			
Leu Phe Lys Ile His	Phe Arg Gly Ser	Asn Ala Ile Asn	Ser Lys Val			
	980	985	990			
Thr Gly Ser Gly Ile	Gly Leu Met Leu	Val Trp Lys Leu	Val His Leu			
	995	1000	1005			
His Lys Gly Lys Ile	Asn Leu Ser Ser	Val Glu His Gln	Gly Ser Ser			
	1010	1015	1020			
Ile Lys Val Ser Phe	Pro Lys Asp Ser	Lys His Phe His	Lys Ala His			
1025	1030	1035	1040			
Leu Ala Thr Arg Thr	Arg Glu Leu Ser	Thr Glu Gln Val	Pro His Val			
	1045	1050	1055			
Ser Pro Ala Glu Ile	Tyr Glu Lys Ala	Lys Lys Gln His	Asp Gln Asn			
	1060	1065	1070			
Leu Gln Arg Leu Leu	Ile Val Glu Asp	Asn Asp Glu Leu	Arg Asn Tyr			
	1075	1080	1085			
Leu Thr His Thr Leu	Ser Asp Asn Tyr	Thr Ile Gln Thr	Cys Ser Asn			
	1090	1095	1100			

1100 1095 1090 1085 1080 1075 1070 1065 1060 1055 1050 1045 1040 1035 1030 1025 1020 1015 1010 1005 1000 995 990 985 980 975 970 965 960 955 950 945 940 935 930 925 920 915 910 905 900 895 890 885 880 875 870 865 860 855 850 845 840 835 830 825 820 815 810 805 800 795 790 785 780 775 770 765 760 755 750 745 740 735 730 725 720 715 710 705 700 695 690 685 680 675 670 665 660 655 650 645 640 635 630 625

Gly Lys Glu Ala Leu Thr Ile Val Lys Glu Tyr Met Pro Glu Leu Ile
 1105 1110 1115 1120
 Ile Ser Asp Ile Met Met Pro Glu Met Arg Gly Asp Glu Leu Cys Ala
 1125 1130 1135
 Ala Ile Lys Asn Asp Ile Glu Thr Ser His Ile Pro Ile Ile Leu Leu
 1140 1145 1150
 Thr Ala Leu Asn Asp Glu Lys Asn Ile Leu Glu Gly Leu Lys Ile Gly
 1155 1160 1165
 Ala Asp Glu Tyr Ile Val Lys Pro Phe Asn Ile Gly Ile Leu Lys Ala
 1170 1175 1180
 Thr Ile Ala Asn Leu Leu Thr Asn Arg Ala Leu Leu Lys Ser Lys Tyr
 1185 1190 1195 1200
 Ala Asn Leu Glu Val Ser Glu Glu Glu Glu Val Ser Pro Asn Cys Ala
 1205 1210 1215
 Thr Asp Leu Asp Trp Lys Phe Ile Ala Thr Val Lys Lys Ser Val Glu
 1220 1225 1230
 Glu Asn Ile Asp Asn Pro Ala Phe Asn Val Asp Val Leu Cys Asn Leu
 1235 1240 1245
 Leu Asn Met Ser Arg Thr Ser Phe Tyr Asn Lys Leu Lys Ala Leu Thr
 1250 1255 1260
 Asp Gln Ala Pro Ala Asp Tyr Ile Arg Leu Ile Arg Leu Lys Arg Ala
 1265 1270 1275 1280
 Ala Ala Leu Leu Lys Thr Gly Gln His Ser Val Thr Glu Ile Ser Glu
 1285 1290 1295
 Leu Thr Gly Phe Asn Asp Val Lys Tyr Phe Arg Glu Val Phe Lys Lys
 1300 1305 1310
 His Phe Lys Val Ser Pro Ser Lys Tyr Cys Lys Glu Gly Gly Lys Glu
 1315 1320 1325
 Asp Val Glu Glu Gln Gln Glu
 1330 1335

<210> 7532

<211> 180

<212> PRT

<213> B.fragilis

<400> 7532

Met Asn Ile Tyr Leu Glu Ala Phe Gly Ile Phe Phe Lys Ile Gly Ala
 1 5 10 15
 Phe Thr Ile Gly Gly Tyr Ala Met Val Pro Leu Ile Glu Asn Glu
 20 25 30
 Ile Val Thr Lys Arg Asn Trp Ile Ser Lys Asp Asp Phe Ile Asp Leu
 35 40 45
 Leu Ala Ile Ala Gln Ser Ala Pro Gly Ile Leu Ala Val Asn Ile Ser
 50 55 60
 Ile Phe Ile Gly Tyr Lys Leu Arg Gly Ile Arg Gly Ser Leu Val Thr
 65 70 75 80
 Ala Leu Gly Thr Val Leu Pro Ser Phe Val Ile Ile Leu Ala Ile Ala
 85 90 95
 Met Phe Phe His Asn Phe Lys Asp Asn Pro Ile Val Glu Arg Ile Phe
 100 105 110
 Lys Gly Ile Arg Pro Ala Val Val Ala Leu Ile Ala Ala Pro Thr Phe
 115 120 125
 Ser Met Ala Lys Ser Ala Lys Val Asn Arg Tyr Thr Leu Trp Ile Pro
 130 135 140
 Val Val Ser Ala Leu Leu Ile Trp Leu Leu Gly Phe Ser Pro Ile Trp
 145 150 155 160
 Ile Ile Ile Ala Ala Gly Val Gly Gly Phe Cys Trp Gly Lys Trp Lys
 165 170 175

Gln Ser His Pro
180

<210> 7533
<211> 459
<212> PRT
<213> B.fragilis

<400> 7533

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Leu	Asn	Lys	Tyr	Thr	Met	Lys	Val	Lys	Pro	Asp	Leu	Ser	Phe	Trp	Lys
			20					25					30		
Leu	Trp	Asn	Ile	Ser	Phe	Gly	Phe	Phe	Gly	Val	Gln	Ile	Ala	Tyr	Ala
		35				40					45				
Leu	Gln	Ser	Ala	Asn	Ile	Ser	Arg	Ile	Phe	Ala	Thr	Leu	Gly	Ala	Asp
	50					55				60					
Pro	His	Ser	Leu	Ser	Tyr	Phe	Trp	Ile	Leu	Pro	Pro	Leu	Ala	Gly	Ile
65					70					75					80
Ile	Val	Gln	Pro	Ile	Ile	Gly	Ala	Ala	Ser	Asp	Lys	Thr	Trp	Thr	Arg
				85					90					95	
Phe	Gly	Arg	Arg	Ile	Pro	Tyr	Leu	Phe	Ala	Gly	Ser	Leu	Leu	Ala	Val
			100					105					110		
Trp	Val	Met	Cys	Leu	Leu	Pro	Asn	Ala	Gly	Ser	Phe	Gly	Met	Ala	Val
		115					120					125			
Gly	Thr	Ala	Met	Ile	Phe	Gly	Leu	Val	Ala	Leu	Met	Phe	Leu	Asp	Thr
		130				135					140				
Ser	Ile	Asn	Met	Ala	Met	Gln	Pro	Phe	Lys	Met	Leu	Val	Gly	Asp	Met
145					150					155					160
Val	Asn	Glu	Lys	Gln	Lys	Gly	Leu	Ala	Tyr	Ser	Ile	Gln	Ser	Phe	Leu
				165					170					175	
Cys	Asn	Val	Gly	Ser	Leu	Ile	Gly	Tyr	Leu	Phe	Pro	Phe	Ile	Phe	Thr
			180					185					190		
Phe	Ile	Gly	Ile	Ser	Asn	Thr	Ala	Asp	Lys	Gly	Thr	Val	Pro	Asp	Ser
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Val	Ile	Tyr	Ser	Phe	Tyr	Ile	Gly	Ala	Ala	Ile	Leu	Ile	Leu	Cys	Val
	210					215					220				
Ile	Tyr	Thr	Thr	Val	Lys	Val	Lys	Glu	Met	Pro	Pro	Lys	Glu	Phe	Glu
225					230					235					240
Glu	Phe	His	Gly	Ile	Thr	Ala	Asp	Glu	Lys	Lys	Glu	Lys	Ala	Asp	Phe
				245					250					255	
Ile	Ser	Leu	Leu	Lys	His	Ala	Pro	Lys	Val	Phe	Trp	Thr	Val	Gly	Leu
		260						265					270		
Val	Gln	Phe	Phe	Cys	Trp	Ala	Ala	Phe	Met	Tyr	Met	Trp	Thr	Tyr	Thr
		275					280					285			
Asn	Gly	Ala	Ile	Ala	Ala	Thr	Val	Trp	Gly	Thr	Thr	Asp	Val	Gln	Ser
	290					295						300			
Ala	Gly	Tyr	Gln	Glu	Ala	Gly	Asn	Trp	Val	Gly	Val	Leu	Phe	Ala	Val
305					310					315					320
Gln	Ala	Ile	Gly	Ser	Val	Ile	Trp	Ala	Val	Ile	Leu	Pro	Leu	Phe	Lys
				325					330					335	
Ala	Arg	Lys	Gln	Ala	Tyr	Ala	Leu	Ser	Leu	Val	Leu	Gly	Gly	Ile	Gly
			340					345					350		
Phe	Ile	Ser	Thr	Leu	Phe	Phe	His	Asn	Glu	Tyr	Leu	Leu	Phe	Ile	Ser
		355					360					365			
Tyr	Leu	Leu	Ile	Gly	Cys	Ala	Trp	Ala	Ala	Met	Leu	Ala	Met	Pro	Phe
	370					375					380				
Thr	Ile	Leu	Thr	Asn	Ser	Val	Ser	Gly	Lys	Asn	Met	Gly	Ala	Tyr	Leu
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114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Gly Leu Phe Asn Gly Thr Ile Cys Val Pro Gln Ile Ala Ala Ala Leu
 405 410 415
 Val Gly Gly Gly Leu Leu His Leu Val Gly Gly His Gln Val Asn Met
 420 425 430
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 Phe Ile Lys Glu Thr Met Ala His His Glu Ala
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 Lys Phe Phe Tyr Ser Ile Ser Phe Ser Pro Pro Thr Asn Leu Leu Ile
 35 40 45
 Phe Ala Arg Lys Glu Asn Lys Ile Val Tyr Thr His Met Ile Leu Phe
 50 55 60
 Phe Arg Thr Pro Ser Lys Ser Val Ile Ala Val Glu Ser Asn His Glu
 65 70 75 80
 Leu Asn Ala Asn Asp Asn Asn Lys Leu Cys Trp Leu Phe Gly Glu Ala
 85 90 95
 Met Pro Glu Ser Glu Glu Asn Leu Gln Gly Cys Phe Val Gly Pro Arg
 100 105 110
 Arg Glu Met Ile Thr Pro Trp Ser Thr Asn Ala Val Glu Ile Thr Gln
 115 120 125
 Asn Met Gly Leu Asp Gly Ile Ser Arg Ile Glu Glu Tyr Phe Pro Val
 130 135 140
 Lys Asp Glu Asn Ala Asp His Asp Pro Met Leu Gln Arg Met Tyr Lys
 145 150 155 160
 Gly Leu Asn Gln Asn Val Phe Thr Thr Asn Arg Gln Pro Glu Ala Ile
 165 170 175
 Ile Tyr Ile Asp Asp Leu Glu Ala Tyr Asn Glu Lys Glu Gly Leu Ala
 180 185 190
 Leu Ser Lys Glu Glu Met Asp Tyr Leu Lys Lys Val Glu Ser Asp Leu
 195 200 205
 Gly Arg Arg Leu Thr Asp Ser Glu Val Phe Gly Phe Ala Gln Ile Asn
 210 215 220
 Ser Glu His Cys Arg His Lys Ile Phe Gly Gly Thr Phe Ile Ile Asp
 225 230 235 240
 Gly Val Glu Gln Glu Ser Ser Leu Phe Gln Met Ile Lys Lys Thr Thr
 245 250 255
 Gln Glu Asn Pro Asn Lys Ile Ile Ser Ala Tyr Lys Asp Asn Val Ala
 260 265 270
 Phe Ala Glu Gly Pro Val Val Glu Gln Phe Ala Pro Ala Asp His Ser
 275 280 285
 Lys Pro Asp Phe Phe Arg Ile Lys Asp Ile Lys Ser Val Ile Ser Leu
 290 295 300
 Lys Ala Glu Thr His Asn Phe Pro Thr Thr Val Glu Pro Phe Asn Gly
 305 310 315 320
 Ala Ser Thr Gly Thr Gly Gly Glu Ile Arg Asp Arg Met Gly Gly Gly
 325 330 335
 Lys Gly Ser Trp Pro Ile Ala Gly Thr Ala Val Tyr Met Thr Ser Tyr
 340 345 350

Pro Arg Thr Glu Glu Gly Arg Glu Trp Glu Asp Ile Leu Pro Val Arg
 355 360 365
 Lys Trp Leu Tyr Gln Thr Pro Glu Gln Ile Leu Ile Lys Ala Ser Asn
 370 375 380
 Gly Ala Ser Asp Phe Gly Asn Lys Phe Gly Gln Pro Leu Ile Cys Gly
 385 390 395 400
 Ser Val Leu Thr Phe Glu His Thr Glu Asn Asn Glu Thr Tyr Ala Tyr
 405 410 415
 Asp Lys Val Ile Met Leu Ala Gly Gly Val Gly Tyr Gly Thr Gln Arg
 420 425 430
 Asp Cys Leu Lys Gly Gln Pro Glu Ala Gly Asn Lys Val Val Val Ile
 435 440 445
 Gly Gly Asp Asn Tyr Arg Ile Gly Leu Gly Gly Gly Ser Val Ser Ser
 450 455 460
 Val Asp Thr Gly Arg Tyr Ser Ser Gly Ile Glu Leu Asn Ala Val Gln
 465 470 475 480
 Arg Ala Asn Ala Glu Met Gln Lys Arg Ala Asn Asn Val Val Arg Ala
 485 490 495
 Leu Cys Glu Glu Asp Glu Asn Pro Val Val Ser Ile His Asp His Gly
 500 505 510
 Ser Ala Gly His Val Asn Cys Leu Ser Glu Leu Val Glu Glu Cys Gly
 515 520 525
 Gly Leu Ile Asp Met Ser Lys Leu Pro Ile Gly Asp Lys Thr Leu Ser
 530 535 540
 Ala Lys Glu Ile Ile Ala Asn Glu Ser Gln Glu Arg Met Gly Leu Leu
 545 550 555 560
 Ile Lys Glu Glu Ala Ile Glu His Val Arg Gln Ile Ala Glu Arg Glu
 565 570 575
 Arg Ala Pro Met Tyr Val Val Gly Glu Thr Thr Gly Asp His Arg Phe
 580 585 590
 Ala Phe Gln Gln Ala Asp Gly Val Arg Pro Phe Asp Leu Ala Val Asp
 595 600 605
 Gln Met Phe Gly Ser Ser Pro Lys Thr Tyr Met Ile Asp Lys Thr Val
 610 615 620
 Glu Arg His Tyr Thr Met Pro Glu Tyr Glu Thr Ser Lys Leu His Glu
 625 630 635 640
 Tyr Leu Thr Gln Val Leu Gln Leu Glu Ala Val Ala Cys Lys Asp Trp
 645 650 655
 Leu Thr Asn Lys Val Asp Arg Ser Val Thr Gly Lys Val Ala Arg Gln
 660 665 670
 Gln Cys Gln Gly Glu Ile Gln Leu Pro Leu Ser Asp Cys Gly Val Val
 675 680 685
 Ala Leu Asp Tyr Arg Gly Glu Lys Gly Ile Ala Thr Ser Ile Gly His
 690 695 700
 Ala Pro Gln Ala Ala Leu Ala Asp Pro Ala Ala Gly Ser Ile Leu Ser
 705 710 715 720
 Val Ser Glu Ala Leu Thr Asn Leu Val Trp Ala Pro Leu Ala Glu Gly
 725 730 735
 Leu Asp Ser Val Ser Leu Ser Ala Asn Trp Met Trp Pro Cys Arg Ser
 740 745 750
 Gln Glu Gly Glu Asp Ala Arg Leu Tyr Thr Ala Val Lys Ala Leu Ser
 755 760 765
 Asp Phe Cys Cys Ala Leu Gln Ile Asn Val Pro Thr Gly Lys Asp Ser
 770 775 780
 Leu Ser Met Thr Gln Lys Tyr Pro Asn Gly Glu Lys Val Val Ser Pro
 785 790 795 800
 Gly Thr Val Ile Val Ser Ala Gly Gly Glu Val Ser Asp Val Lys Lys
 805 810 815
 Val Val Ser Pro Val Leu Val Asn Asp Ala Lys Thr Thr Leu Tyr His

	820		825		830
Ile Asp Phe Ser Phe Asp Asn Leu Lys Leu Gly Gly Ser Ala Phe Ala					
	835		840		845
Gln Ser Leu Gly Lys Val Gly Ser Glu Val Pro Cys Val Gln Asp Ala					
	850		855		860
Glu Tyr Phe Arg Asp Ala Phe Leu Ala Val Gln Glu Leu Val Asn Lys					
865		870		875	880
Gly Leu Ile Leu Ala Gly His Asp Ile Ser Ala Gly Gly Leu Ile Thr					
	885		890		895
Thr Leu Leu Glu Met Cys Phe Ala Asn Val Glu Gly Gly Leu Glu Ile					
	900		905		910
Ser Leu Asp Lys Met Lys Glu Thr Asp Ile Val Lys Ile Leu Phe Ala					
	915		920		925
Glu Asn Pro Gly Ile Val Ile Gln Ile Ser Asp Lys His Lys Asp Glu					
	930		935		940
Val Lys Lys Ile Leu Glu Asp Ala Gly Val Gly Phe Ile Lys Leu Gly					
945		950		955	960
Lys Pro Thr Asp Glu Arg His Ile Leu Val Asn Lys Glu Gly Ala Thr					
	965		970		975
Tyr Gln Phe Gly Ile Asp Tyr Met Arg Asp Val Trp Tyr Ser Ser Ser					
	980		985		990
Tyr Leu Leu Asp Arg Lys Gln Ser Met Asn Gly Cys Ala Lys Lys Arg					
	995		1000		1005
Phe Glu Asn Tyr Lys Met Gln Pro Leu Glu Phe Ala Phe Met Pro Gly					
	1010		1015		1020
Phe Lys Gly Lys Leu Ser Gln Tyr Gly Ile Thr Pro Glu Arg Arg Thr					
1025		1030		1035	1040
Pro Ser Gly Ile Arg Ala Ala Ile Ile Arg Glu Lys Gly Thr Asn Gly					
	1045		1050		1055
Glu Arg Glu Met Ala Tyr Ser Leu Tyr Leu Ala Gly Phe Asp Val Lys					
	1060		1065		1070
Asp Val Thr Met Thr Asp Leu Ile Ser Gly Arg Glu Thr Leu Glu Asp					
	1075		1080		1085
Val Asn Met Ile Val Tyr Cys Gly Gly Phe Ser Asn Ser Asp Val Leu					
	1090		1095		1100
Gly Ser Ala Lys Gly Trp Ala Gly Gly Phe Leu Phe Asn Pro Lys Ala					
1105		1110		1115	1120
Lys Glu Ala Leu Asp Lys Phe Tyr Ala Arg Glu Asp Thr Leu Ser Leu					
	1125		1130		1135
Gly Ile Cys Asn Gly Cys Gln Leu Met Met Glu Leu Gly Leu Val Asn					
	1140		1145		1150
Pro Glu His Glu Lys Lys Gly Lys Met Leu His Asn Glu Ser His Lys					
	1155		1160		1165
Phe Glu Ser Thr Phe Val Gly Val Thr Ile Pro Thr Asn Arg Ser Val					
	1170		1175		1180
Met Phe Gly Ser Leu Ser Gly Ser Lys Leu Gly Ile Trp Val Ala His					
1185		1190		1195	1200
Gly Glu Gly Lys Phe Ser Leu Pro Tyr Asp Glu Asp Gln Tyr Asn Val					
	1205		1210		1215
Val Ala Lys Tyr Ser Tyr Asp Glu Tyr Pro Gly Asn Pro Asn Gly Ser					
	1220		1225		1230
Asp Tyr Ser Ile Ala Ala Leu Ala Ser Ala Asp Gly Arg His Leu Ala					
	1235		1240		1245
Met Met Pro His Leu Glu Arg Ala Ile Phe Pro Trp Gln Asn Ala Cys					
	1250		1255		1260
Tyr Pro Ala Asp Arg Val His Asn Asp Gln Val Thr Pro Trp Ile Glu					
1265		1270		1275	1280
Ala Phe Val Asn Ala Arg Lys Trp Val Glu Glu Lys Lys Lys					
	1285		1290		

[illegible]

Ser	Val	Val	His	Ser	Lys	Pro	Tyr	Thr	Ile	Met	Asn	Leu	Ala	Lys	Tyr
1				5					10					15	
Ser	Leu	Asp	Asn	Thr	Lys	Val	Ile	Tyr	Phe	Phe	Leu	Ala	Val	Leu	Leu
			20					25					30		
Ile	Gly	Gly	Val	Phe	Ser	Phe	Gly	Lys	Leu	Gly	Lys	Lys	Glu	Asp	Ala
		35					40					45			
Pro	Phe	Val	Ile	Lys	Ser	Ala	Val	Ile	Met	Thr	Arg	Tyr	Pro	Gly	Ala
	50					55					60				
Glu	Pro	Ala	Glu	Val	Glu	Arg	Leu	Ile	Thr	Glu	Pro	Ile	Ser	Arg	Glu
65					70					75					80
Ile	Gln	Ser	Met	Ser	Gly	Val	Tyr	Lys	Ile	Lys	Ser	Glu	Ser	Met	Tyr
				85				90						95	
Gly	Ile	Ser	Lys	Ile	Thr	Phe	Glu	Leu	Leu	Pro	Ser	Leu	Pro	Ala	Ser
			100				105						110		
Ser	Ile	Pro	Gln	Lys	Trp	Asp	Glu	Leu	Arg	Arg	Lys	Val	Leu	Asn	Ile
		115					120					125			
Gln	Pro	Gln	Leu	Pro	Ser	Gly	Ser	Ser	Val	Pro	Thr	Val	Ser	Asp	Asp
	130					135					140				
Phe	Gly	Asp	Val	Phe	Gly	Ile	Tyr	Tyr	Gly	Leu	Thr	Ala	Asp	Asp	Gly
145					150					155					160
Phe	Ser	Tyr	Glu	Glu	Met	Arg	Asn	Trp	Ala	Glu	Arg	Ile	Lys	Thr	Gln
				165					170					175	
Val	Val	Thr	Ala	Asp	Gly	Val	Met	Lys	Val	Ala	Leu	Phe	Gly	Thr	Gln
			180					185					190		
Thr	Glu	Val	Val	Asn	Ile	Ser	Ile	Ser	Val	Asn	Lys	Leu	Ala	Gly	Met
		195					200					205			
Gly	Ile	Asp	Pro	Lys	Gln	Leu	Ala	Gly	Leu	Leu	Gln	Ser	Gln	Asn	Gln
	210					215					220				
Ile	Ile	Asn	Thr	Gly	Glu	Ile	Thr	Ala	Gly	Glu	Gln	Gln	Leu	Arg	Val
225					230					235					240
Val	Ala	Asn	Gly	Met	Tyr	Thr	Thr	Val	Asp	Asp	Ile	Arg	Asn	Gln	Val
				245					250					255	
Ile	Thr	Thr	Arg	Ala	Gly	Gln	Val	Lys	Leu	Gly	Asp	Ile	Ala	Val	Ile
			260					265					270		
Glu	Lys	Gly	Tyr	Met	Asp	Pro	Pro	Gly	Thr	Ile	Met	Arg	Val	Asn	Gly
		275					280					285			
Lys	Arg	Ala	Ile	Gly	Ile	Gly	Val	Ser	Thr	Asp	Pro	Gln	Arg	Asp	Val
		290				295					300				
Val	Leu	Thr	Gly	Glu	Met	Val	Asp	Lys	Lys	Leu	Ala	Glu	Leu	Leu	Pro
305					310					315					320
Leu	Met	Pro	Val	Gly	Leu	Asn	Leu	Glu	Ser	Leu	Tyr	Leu	Glu	Asn	Val
				325					330					335	
Ile	Ala	Lys	Glu	Ala	Asn	Asn	Gly	Phe	Ile	Ile	Asn	Leu	Ile	Glu	Ser
			340					345					350		
Ile	Leu	Ile	Val	Ile	Val	Ile	Ile</								

[illegible]

895

<213> B.fragilis

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 Tyr Arg Leu Lys Ile Asn Cys Phe Lys Asn Leu Glu Lys Thr Gln Ala
 305 310 315 320
 Leu Trp Ala Ala Ala Thr Ser Glu Asn Gln Asn Phe Phe Leu Gln Lys
 325 330 335
 Glu Lys Asn Gly Gly Arg Glu Ile His Leu Arg Gly Tyr Glu Pro Thr
 340 345 350
 Ala Tyr Tyr Ser Asn Ser Tyr Ala Gly Glu Ala Gly Gly Asn Met Arg
 355 360 365
 Thr Asp Ile Lys Tyr Cys Ser Thr Asp Asn Phe Val Trp Gly Ile Lys
 370 375 380
 Ile Pro Val Ala Ile Pro His Pro Ile Glu Lys Ile Asp Ile Met Gln
 385 390 395 400
 Val Tyr Ser Lys Phe Arg Ser Trp Ile Thr Glu Pro Asn His Ser Asp
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 420 425 430
 Ser Lys Val Ile Gly
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 35 40 45
 Lys Thr Gln Phe Gly Leu Gln Ala Gln Gly Gly Ala Phe Leu Val Asp
 50 55 60
 Asn Val Ala Leu Met Leu Thr Ala Gly Ala Asn Trp Ser Lys Pro Glu
 65 70 75 80
 Asp Lys Tyr Thr Leu Gly Val Gly Gly Arg Tyr Tyr Phe Asp Lys Cys
 85 90 95
 Gly Ile Tyr Leu Gly Ala Gly Leu Lys Met Asn Arg Tyr Asn Trp Lys
 100 105 110
 Val Gly Asp Thr Thr Asp Phe Ala Phe Gly Ala Glu Ala Gly Tyr Ala
 115 120 125
 Phe Phe Leu Thr Arg Thr Val Thr Ile Glu Pro Ala Val Tyr Tyr Asp
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 Phe Gly Phe Tyr Phe
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 35 40 45
 Lys Asp Phe Ser Gly Ile Val Glu Ala Val Asp Tyr Val Lys Leu Ala
 50 55 60
 Phe Arg Val Ser Gly Gln Ile Ile Asn Leu Pro Val Val Glu Gly Gln
 65 70 75 80
 Arg Val Lys Lys Gly Gln Leu Ile Ala Ala Ile Asp Pro Arg Asp Leu
 85 90 95
 Ala Leu Gln Tyr Ala Ala Asp Lys Ser Ala Tyr Glu Thr Ala Ala Ala
 100 105 110
 Gln Val Glu Arg Asn Lys Arg Leu Leu Ala Arg Gln Ala Ile Ser Val
 115 120 125
 Gln Glu Tyr Glu Ile Ser Val Ser Thr Phe Gln Gln Lys Lys Ser Ala
 130 135 140
 Tyr Glu Leu Ser Ser Asn Asn Met Arg Asp Thr Arg Leu Thr Ala Pro
 145 150 155 160
 Phe Asp Gly Ser Ile Glu Lys Arg Leu Val Glu Asn Tyr Gln Arg Val
 165 170 175
 Asn Ser Gly Glu Gly Ile Val Gln Leu Val Asn Thr Lys Lys Leu Arg
 180 185 190
 Ile Lys Phe Thr Ile Pro Asp Ala Tyr Leu Tyr Leu Leu Arg Ser Lys
 195 200 205
 Asp Gln Arg Phe Arg Val Glu Phe Asp Thr Tyr Arg Gly His Ile Phe
 210 215 220
 Asn Ala Lys Leu Glu Glu Tyr Leu Asp Ile Ser Thr Asp Gly Thr Gly
 225 230 235 240
 Ile Pro Val Thr Ile Thr Ile Asp Asp Pro Ala Phe Asp His Ala Leu
 245 250 255
 Tyr Glu Val Lys Pro Gly Phe Thr Cys Ser Ile Arg Phe Ser Ala Asp
 260 265 270
 Val Gly Pro Phe Leu Glu Glu Ser Met Thr Val Val Pro Leu Ser Ala
 275 280 285
 Ile Phe Gly Glu Ser Glu Gly Asn Lys Thr Tyr Val Trp Val Leu Asn
 290 295 300
 Gly Asn Gln Val Asn Arg Arg Glu Val Thr Val Tyr Ser Pro Met Gly
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 Asp Ala Gln Ala Phe Ile Ser Lys Gly Leu Lys Ala Gly Glu Thr Val
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 Val Thr Ala Gly Val Thr Gln Leu Val Glu Gly Glu Thr Val Lys Glu
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 Leu Lys

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<211> 773

<212> PRT

<213> B.fragilis

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 20 25 30
 Leu Gly Asn Gly Arg Phe Gly Gln Arg Gly Asn Phe Glu Glu Thr Tyr
 35 40 45
 Ser Ser Asp Ser Leu Gln Gly Ser Tyr Val Ala Gly Ile Thr Phe Leu
 50 55 60

Asp	Arg	Thr	Arg	Val	Gly	Trp	Trp	Lys	Asn	Gly	Tyr	Pro	Arg	Phe	Phe
65					70					75					80
Ser	Arg	Val	Pro	Asn	Ala	Pro	Asp	Trp	Ser	Gly	Ile	Tyr	Leu	Arg	Leu
				85					90						95
Ile	Asp	Glu	Glu	Leu	Asp	Leu	Val	His	Trp	Asp	Val	Glu	Ala	Tyr	Arg
				100				105							110
Arg	Arg	Leu	Asp	Met	Arg	Glu	Gly	Ile	Ser	Tyr	Arg	Asp	Phe	Arg	Val
		115					120					125			
Thr	Ser	Pro	Lys	Gly	His	Thr	Leu	Glu	Val	His	Val	Glu	His	Ile	Asn
		130					135					140			
Ser	Leu	Ala	Asn	Gln	Asn	Leu	Cys	Leu	Ile	Lys	Tyr	Ser	Val	Thr	Ser
145					150					155					160
Val	Asn	Tyr	Glu	Gly	Lys	Ile	Ser	Leu	Val	Pro	Phe	Leu	Asn	Gly	Asp
				165						170					175
Val	Lys	His	Glu	Asn	Ser	Asn	Phe	Asp	Glu	Lys	Met	Trp	Asn	Ile	Leu
			180					185						190	
Arg	Ala	Glu	Ala	Thr	Asn	Glu	Tyr	Ala	Tyr	Leu	Trp	Val	Gln	Thr	Lys
		195					200						205		
His	Glu	Asp	Ser	Gln	Ile	Cys	Leu	Gly	Met	Thr	Tyr	Arg	Phe	Tyr	Lys
	210					215					220				
Asn	Ser	Lys	Pro	Thr	His	Ile	Ser	Pro	Ile	Lys	Ile	Glu	Lys	Glu	Lys
225					230					235					240
Leu	Thr	Gly	Phe	Ser	Ala	Gly	Ala	Asp	Val	Lys	Pro	Gly	Asp	Arg	Val
			245						250						255
Thr	Leu	Glu	Lys	Tyr	Val	Ala	Ile	Leu	Ser	Ser	Leu	Gln	Cys	Asp	Arg
		260						265						270	
Gln	Glu	Leu	Val	Glu	Tyr	Ala	Val	Asp	Glu	Ala	Gln	Ala	Ala	Lys	Glu
		275					280								
Gln	Gly	Trp	Glu	Ala	Leu	Val	Gly	Ala	His	Lys	Gln	Gln	Trp	Glu	Glu
	290					295					300				
Ile	Trp	Glu	Glu	Ser	Asp	Val	Met	Ile	Glu	Gly	Asp	Pro	Ala	Ala	Gln
305					310					315					320
Gln	Gly	Ile	Arg	Phe	Asn	Ile	Phe	Gln	Leu	Asn	Gln	Ser	Tyr	Arg	Gly
				325					330						335
Asp	Asp	Ala	Arg	Leu	Asn	Ile	Ser	Pro	Lys	Gly	Phe	Thr	Gly	Glu	Lys
		340						345						350	
Tyr	Gly	Gly	Asn	Thr	Gln	Trp	Asn	Thr	Glu	Leu	Cys	Cys	Val	Pro	Tyr
	355						360					365			
Phe	Leu	Leu	Ser	Thr	Pro	Arg	Glu	Ile	Ser	Arg	Lys	Leu	Leu	Leu	Tyr
	370					375					380				
Arg	Tyr	Asn	Gln	Leu	Pro	Lys	Ala	Ile	Glu	Asn	Ala	Arg	Lys	Leu	Gly
385					390					395					400
Phe	Gly	Gly	Gly	Ala	Ala	Leu	Tyr	Pro	Met	Val	Thr	Ile	His	Gly	Glu
				405					410						415
Glu	Cys	His	Asn	Glu	Trp	Glu	Ile	Thr	Phe	Glu	Glu	Ile	His	Arg	Asn
			420					425					430		
Asn	Ile	Ile	Val	Tyr	Ala	Ile	Met	Gln	Phe	Ser	Arg	Val	Thr	Gly	Asn
		435					440					445			
Lys	Glu	Tyr	Ile	Ala	Tyr	Tyr	Gly	Leu	Glu	Val	Met	Ile	Ala	Ile	Ser
	450					455					460				
Arg	Phe	Trp	Ser	Gln	Arg	Val	Ser	Phe	Ser	Glu	Ala	Arg	Gln	Lys	Tyr
465					470					475					480
Val	Leu	Leu	Gly	Val	Thr	Gly	Pro	Asn	Glu	Tyr	Glu	Asn	Asn	Val	Asn
			485						490						495
Asn	Asn	Trp	Tyr	Thr	Asn	Tyr	Ser	Cys	Val	Gln	Cys	Leu	Gln	Ser	Thr
		500						505					510		
Ile	Glu	Cys	Leu	Glu	Met	Val	Ala	His	Glu	Tyr	Pro	Glu	Glu	Tyr	Asn
		515					520					525			
Arg	Ile	Arg	Arg	Ser	Thr	Glu	Phe	Arg	His	Ala	Glu	Glu	Thr	Ala	Arg

530 535 540
 Trp Lys Glu Ile Ile Glu Lys Met Tyr Leu Pro Glu Asp Lys Glu Arg
 545 550 555 560
 Gly Ile Phe Val Gln Asp Asp Gly Tyr Pro Asp Lys Val Leu Gly Thr
 565 570 575
 Val Asp Asp Ile Pro Val Asn Glu Arg Pro Ile Asn Gln His Trp Ser
 580 585 590
 Trp Asp Arg Ile Leu Arg Ser Cys Tyr Ile Lys Gln Ser Asp Val Leu
 595 600 605
 Leu Gly Leu Phe Leu Tyr Tyr Glu His Phe Asp Arg Glu Thr Ile Arg
 610 615 620
 Arg Asn Phe Arg Phe Tyr Glu Pro Arg Thr Val His Glu Ser Ser Leu
 625 630 635 640
 Ser Pro Phe Val His Ala Ile Leu Ala Ala Trp Ile Gly Asp Thr Glu
 645 650 655
 Glu Ala Tyr Arg Leu Phe Leu His Ser Thr Arg Leu Asp Leu Asp Asp
 660 665 670
 Tyr Asn Asn Glu Val His Gln Gly Leu His Val Thr Ser Met Ala Gly
 675 680 685
 Ser Trp Gln Ile Ile Val Arg Gly Phe Ala Gly Met Lys Ile Leu Asp
 690 695 700
 Gly Gln Leu Asp Phe Thr Pro Ile Ile Pro Glu Ala Trp Asp Ser Tyr
 705 710 715 720
 Thr Phe Lys Val Asn Phe Arg Asn Cys Thr Leu Gln Met Lys Val Gly
 725 730 735
 Lys Gln Glu Ile Lys Ile Ser Leu Leu Glu Gly Tyr Glu Leu Asn Ile
 740 745 750
 Arg Ile Ser Glu Val Val Tyr Asn Leu Lys Lys Gly Lys Asp Leu Ile
 755 760 765
 Val Pro Lys Gln Asn
 770

<210> 7540
 <211> 97
 <212> PRT
 <213> B.fragilis

<400> 7540
 Gln Ile Lys Leu Cys Ala Leu Phe Ile Phe Arg Ala Ile Leu Trp Tyr
 1 5 10 15
 Glu Trp Trp Glu Met Ile Leu Asp Gln Arg Gln Val Arg Gly Asp Leu
 20 25 30
 Phe Cys His Glu Gly Ile Leu Leu Ser Leu Ala Asp Arg Gly Cys Val
 35 40 45
 Gly Leu Lys Ser Gly Ser Leu Trp Phe Lys Arg Glu Gly Thr Leu Ile
 50 55 60
 Leu Asn Gln Tyr Pro Leu Ser Phe Lys Leu Lys Ser His Ser Arg Tyr
 65 70 75 80
 Ser Cys Phe Trp Ser Thr Phe Cys Leu Ser Ala Val Tyr Phe Tyr Ala
 85 90 95
 Ser

<210> 7541
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 7541

Gly	Cys	Asp	Cys	Phe	His	Phe	Pro	Gln	Gln	Lys	Pro	Pro	Thr	Pro	Ala
1				5					10					15	
Ala	Ile	Ile	Ile	Gln	Met	Gly	Glu	Lys	Pro	Asn	Asn	Gln	Met	Ser	Arg
			20					25					30		
Ala	Glu	Thr	Thr	Gly	Ile	Gln	Arg	Val	Tyr	Arg	Leu	Thr	Leu	Ala	Asp
		35					40					45			
Phe	Ala	Met	Leu	Lys	Val	Gly	Ala	Ala	Ile	Ser	Ala	Thr	Thr	Ala	Gly
	50					55					60				
Arg	Ile	Pro	Leu	Lys	Ile	Arg	Ser	Thr	Met	Gly	Leu	Ser	Leu	Lys	Leu
65					70					75					80

<210> 7542

<211> 341

<212> PRT

<213> B.fragilis

<400> 7542

Lys	Pro	Ile	Cys	Thr	Met	Ser	Lys	Pro	Gln	Ile	Thr	Ile	Lys	Asp	Ile
1				5					10					15	
Ala	Arg	Glu	Leu	Gly	Val	Ser	Pro	Ser	Thr	Val	Ser	Arg	Ala	Leu	Lys
			20					25					30		
Asp	Asn	Pro	Asp	Ile	Ser	Gln	Glu	Thr	Arg	Asp	Ala	Ile	His	Lys	Tyr
		35					40					45			
Ala	Arg	Glu	His	Asn	Tyr	Lys	Pro	Asn	Val	Leu	Ala	Leu	Asn	Leu	Arg
	50					55				60					
Thr	Ser	Arg	Ser	Asn	Thr	Ile	Gly	Val	Ile	Ile	Pro	Gln	Leu	Val	His
65					70				75						80
His	Phe	Phe	Ser	Cys	Val	Leu	Ser	Gly	Ile	Glu	Arg	Thr	Ala	Ala	Glu
				85					90					95	
Ala	Gly	Tyr	Asn	Ile	Leu	Val	Ala	Gln	Ser	Asn	Glu	Glu	Tyr	Glu	Arg
			100					105					110		
Glu	Val	Lys	Ile	Val	His	Ser	Phe	Leu	Ala	Ala	Arg	Val	Cys	Gly	Val
		115					120					125			
Ile	Thr	Ser	Leu	Ala	Lys	Asp	Thr	Ser	Arg	Tyr	Asp	His	Tyr	Gln	Glu
	130					135					140				
Leu	Leu	Asp	Asn	Asn	Ile	Pro	Ile	Val	Phe	Tyr	Asp	Arg	Ile	Cys	Thr
145					150					155					160
Gly	Ile	Asn	Thr	Glu	Arg	Val	Val	Val	Asp	Asp	Tyr	Ala	Gly	Ser	Phe
			165						170					175	
Ala	Ala	Val	Glu	Tyr	Met	Ile	Gln	Thr	Gly	Cys	Lys	Arg	Ile	Phe	Phe
			180					185					190		
Tyr	Ser	Ala	Ala	Pro	His	Leu	Glu	Ile	Ser	Lys	Asn	Arg	Arg	Asn	Gly
		195					200					205			
Tyr	Met	Asp	Ala	Met	Lys	Lys	Tyr	Arg	Ile	Pro	Val	Asp	Gln	Ser	Met
	210					215					220				
Ile	Lys	Leu	Cys	Asp	Ser	Arg	Glu	Lys	Ala	Ile	Ala	Ile	Thr	Pro	Ala
225						230				235					240
Leu	Leu	Glu	Arg	Pro	Asp	His	Pro	Asp	Gly	Phe	Phe	Ala	Ile	Asn	Asp
				245					250					255	
Glu	Thr	Ala	Ser	Gly	Ile	Leu	Tyr	Ser	Cys	Lys	Leu	Thr	Gly	Arg	Lys
		260						265					270		
Val	Pro	Asp	Glu	Val	Ser	Ile	Cys	Gly	Phe	Thr	Asp	Gly	Ala	Ile	Ala
		275					280					285			
Gln	Ser	Thr	Asp	Pro	Lys	Leu	Thr	Thr	Val	Glu	Gln	His	Gly	Glu	Glu
	290					295					300				
Val	Gly	Lys	Ser	Thr	Ile	Arg	Leu	Leu	Ile	Asp	Lys	Leu	Glu	Gly	Asn
305					310					315					320
Asp	Glu	Gly	Lys	Ser	Gly	Asn	Lys	Ile	Val	Arg	Thr	Asn	Leu	Val	Val
				325					330					335	

Arg Gly Thr Thr Lys
340

<210> 7543
<211> 279
<212> PRT
<213> B.fragilis

<400> 7543

Lys Pro Ile Met Asn Leu Arg Lys Leu Ile Leu Leu Leu Ala Leu Phe
1 5 10 15
Leu Ala Thr Gly Val Gly Ala Gln Ile Gln Gln Gln Ser Pro Tyr Pro
20 25 30
Lys Arg Glu Phe Arg Gly Ala Trp Ile Gln Ala Val Asn Gly Gln Phe
35 40 45
Arg Gly Ile Pro Thr Glu Lys Leu Lys Gln Thr Leu Ile Asp Gln Leu
50 55 60
Asn Ser Leu Gln Gly Ala Gly Ile Asn Ala Ile Ile Phe Gln Val Arg
65 70 75 80
Pro Glu Ala Asp Ala Leu Tyr Ala Ser Gln Leu Glu Pro Trp Ser Arg
85 90 95
Phe Leu Thr Gly Val Gln Gly Gln Ala Pro Ser Pro Tyr Trp Asp Pro
100 105 110
Met Gln Phe Met Ile Asp Glu Cys His Lys Arg Gly Met Glu Phe His
115 120 125
Ala Trp Ile Asn Pro Tyr Arg Val Lys Thr Ser Leu Lys Ser Glu Leu
130 135 140
Ser Ala Asn His Leu Tyr Asn Ile His Pro Glu Trp Phe Val Thr Tyr
145 150 155 160
Asn Asn Gln Leu Phe Phe Asp Pro Ala Leu Pro Glu Ser Arg Arg His
165 170 175
Ile Cys Met Val Val Ala Asp Ile Val Ser Arg Tyr Asp Val Asp Ala
180 185 190
Ile His Met Asp Asp Tyr Phe Tyr Pro Tyr Pro Ala Lys Gly Met Asp
195 200 205
Phe Pro Asp Asp Ala Ser Phe Ala Arg Tyr Gly Gly Gly Phe Thr Asn
210 215 220
Arg Ala Asp Trp Arg Arg Ser Asn Val Asn Ile Leu Ile Gln Lys Ile
225 230 235 240
His Glu Thr Ile Arg Gly Leu Lys Pro Trp Val Lys Phe Gly Ile Ser
245 250 255
Pro Phe Gly Ile Tyr Arg Asn Gly Lys Glu Arg Ser Ala Arg Lys Gln
260 265 270
Asp Gln Arg Pro Ala Glu Leu
275

<210> 7544
<211> 937
<212> PRT
<213> B.fragilis

<400> 7544

Leu Thr Ile Phe Ala Val Gln Val Thr Lys Met Leu Met Thr Asp Ser
1 5 10 15
Lys Tyr Ile Ser Ile Lys Gly Ala Arg Val Asn Asn Leu Lys Asn Ile
20 25 30
Asp Val Asn Ile Pro Arg Asn Lys Leu Val Val Ile Thr Gly Leu Ser
35 40 45
Gly Ser Gly Lys Ser Ser Leu Ala Phe Asp Thr Leu Tyr Ala Glu Gly

50		55		60
Gln Arg Arg Tyr Val	Glu Ser Leu Ser Ser Tyr	Ala Arg Gln Phe Leu		
65	70	75	80	
Gly Arg Met Ser Lys	Pro Glu Cys Asp Phe Ile Lys Gly Ile Pro Pro			
	85	90	95	
Ala Ile Ala Ile Glu	Gln Lys Val Asn Ser Arg Asn Pro Arg Ser Thr			
	100	105	110	
Val Gly Thr Ser Thr	Glu Ile Tyr Glu Tyr Leu Arg Leu Leu Tyr Ala			
	115	120	125	
Arg Val Gly Lys Thr Tyr	Ser Pro Val Ser Gly Glu Glu Val Lys Lys			
	130	135	140	
His Ser Ile Glu Asp Ile	Val Asn Cys Met Leu Ser Tyr Pro Glu Gly			
145	150	155	160	
Thr Arg Tyr Thr Val	Leu Thr Gln Ile Tyr Leu His Asp Gly Arg Thr			
	165	170	175	
Leu Glu Gln Gln Leu	Glu Ile Asp Arg Lys Gln Gly Phe Asn Arg Leu			
	180	185	190	
Glu Val Asn Gly Glu	Met Val Arg Ile Asp Glu Tyr Ala Ala Gly Lys			
	195	200	205	
Glu Asp Val Val Tyr	Leu Leu Val Asp Arg Met Thr Ala Ala Lys Ser			
	210	215	220	
Lys Asp Ala Ile Ser	Arg Leu Thr Asp Ser Ala Glu Thr Ala Met Tyr			
225	230	235	240	
Glu Gly Asp Gly Met	Cys Met Leu Arg Phe Tyr Gln Pro Asp Gly Thr			
	245	250	255	
Thr Arg Leu His Thr	Phe Ser Thr Lys Phe Glu Ala Asp Gly Met Thr			
	260	265	270	
Phe Glu Glu Pro Asn	Asp Gln Met Phe Ser Phe Asn Ser Pro Ile Gly			
	275	280	285	
Ala Cys Pro Val Cys	Glu Gly Phe Gly Lys Val Ile Gly Ile Asp Glu			
	290	295	300	
His Leu Val Val Pro	Asn Arg Ser Leu Ser Val Tyr Asp Gly Ala Ile			
305	310	315	320	
Val Cys Trp Arg Gly	Glu Lys Met Gly Glu Trp Arg Glu Glu Leu Ile			
	325	330	335	
His Asn Ala Glu Lys	Phe Asn Phe Pro Ile Phe Thr Pro Tyr Tyr Glu			
	340	345	350	
Leu Thr Asp Glu Gln	Arg Arg Val Leu Trp Glu Gly Asn Gln Tyr Phe			
	355	360	365	
His Gly Ile Asn Asp	Phe Phe Lys Met Leu Glu Glu Asn Gln Tyr Lys			
	370	375	380	
Ile Gln Tyr Arg Val	Met Leu Ala Arg Tyr Arg Gly Lys Thr Leu Cys			
385	390	395	400	
Pro Lys Cys His Gly	Thr Arg Leu Lys Pro Glu Ala Gly Tyr Val Arg			
	405	410	415	
Val Gly Gly Lys Asn	Ile Ser Glu Leu Val Asp Leu Pro Ile Thr Glu			
	420	425	430	
Leu Gln Lys Phe Phe	Asp Ser Leu Thr Leu Asn Glu His Asp Gln Ala			
	435	440	445	
Val Ala Arg Arg Ile	Leu Thr Glu Ile Asn Ser Arg Ile Arg Phe Leu			
	450	455	460	
Ile Asp Val Gly Leu	Gly Tyr Leu Thr Leu Asn Arg Leu Ser Asn Ser			
465	470	475	480	
Leu Ser Gly Gly Glu	Ser Gln Arg Ile Asn Leu Ala Thr Ser Leu Gly			
	485	490	495	
Ser Ser Leu Val Gly	Ser Leu Tyr Ile Leu Asp Glu Pro Ser Ile Gly			
	500	505	510	
Leu His Ser Arg Asp	Thr Asp Arg Leu Val His Val Leu Arg Gln Leu			
	515	520	525	

Gln Gln Leu Gly Asn Thr Val Val Val Val Glu His Asp Glu Glu Ile
 530 535 540
 Ile Arg Ala Ala Asp Tyr Ile Ile Asp Ile Gly Pro Asn Ala Gly Arg
 545 550 555 560
 Leu Gly Gly Gln Val Val Tyr Glu Gly Asp Met Lys Asp Leu Lys Lys
 565 570 575
 Gly Ser Asn Ser Tyr Thr Val Lys Tyr Leu Leu Gly Glu Glu Thr Ile
 580 585 590
 Pro Val Pro Glu His Arg Arg Pro Trp Asn Asn Tyr Ile Glu Ile Lys
 595 600 605
 Gly Ala Arg Glu Asn Asn Leu Lys Gly Val Asp Ala Arg Phe Pro Leu
 610 615 620
 Asn Val Met Thr Val Val Thr Gly Val Ser Gly Ser Gly Lys Ser Thr
 625 630 635 640
 Leu Val Arg Asp Ile Phe Tyr Arg Ala Leu Lys Arg Glu Leu Asp Glu
 645 650 655
 Cys Ser Glu Arg Pro Gly Glu Phe Val Ser Ile Glu Gly Asp Leu Arg
 660 665 670
 Asn Leu Arg Asn Val Glu Phe Val Asp Gln Asn Pro Ile Gly Lys Ser
 675 680 685
 Ser Arg Ser Asn Pro Val Thr Tyr Ile Lys Ala Tyr Asp Glu Ile Arg
 690 695 700
 Lys Leu Trp Ala Asp Gln Pro Leu Ala Lys Gln Met Gly Tyr Thr Ala
 705 710 715 720
 Gly His Phe Ser Phe Asn Asn Glu Gly Gly Arg Cys Glu Glu Cys Lys
 725 730 735
 Gly Asp Gly Thr Ile Thr Val Glu Met Gln Phe Met Ala Asp Leu Val
 740 745 750
 Leu Glu Cys Glu Ser Cys His Gly Lys Arg Phe Lys Ala Asp Thr Leu
 755 760 765
 Glu Val Lys Phe Gln Asp Lys Asn Ile Tyr Asp Val Leu Glu Met Thr
 770 775 780
 Val Asn Gln Ala Ile Glu Phe Phe Thr Glu His Gly Gln Lys Lys Val
 785 790 795 800
 Val Lys Lys Leu Ile Pro Leu Gln Asp Val Gly Leu Gly Tyr Ile Lys
 805 810 815
 Leu Gly Gln Ser Ser Thr Leu Ser Gly Gly Glu Asn Gln Arg Val
 820 825 830
 Lys Leu Ala Tyr Tyr Leu Ser Gln Glu Lys Ala Asp Pro Thr Leu Phe
 835 840 845
 Ile Phe Asp Glu Pro Thr Thr Gly Leu His Phe His Asp Ile Arg Lys
 850 855 860
 Leu Leu Asp Ala Phe Asp Ala Leu Ile Arg Arg Gly His Ser Ile Val
 865 870 875 880
 Ile Ile Glu His Asn Met Asp Val Ile Lys Cys Ala Asp Tyr Val Ile
 885 890 895
 Asp Leu Gly Pro Glu Gly Gly Asp Lys Gly Gly Asn Ile Val Ala Thr
 900 905 910
 Gly Thr Pro Glu Glu Val Ala Ala Cys Ala Ala Ser Tyr Thr Gly Gln
 915 920 925
 Phe Leu Gln Glu Lys Leu Asn His Leu
 930 935

<210> 7545

<211> 256

<212> PRT

<213> B.fragilis

<400> 7545

Glu Arg Gly Ile Ser Ser Ser Pro Val Val Lys Thr Pro Ile Met Phe
 1 5 10 15
 Val Ser Ile Ala Cys Gly Ala Ile Ser Gly Phe His Ala Thr Gln Ser
 20 25 30
 Pro Leu Met Ala Arg Cys Met Thr Ser Glu Arg His Gly Arg Pro Val
 35 40 45
 Phe Tyr Gly Ala Met Ile Thr Glu Gly Ile Val Ala Leu Ile Trp Ala
 50 55 60
 Ala Ala Ala Thr Tyr Phe Tyr Arg Glu His Gly Met Glu Glu Asn Asn
 65 70 75 80
 Ala Ser Val Ile Val Asp Ala Ile Thr Lys Asp Trp Leu Gly Ala Val
 85 90 95
 Gly Gly Val Leu Ala Ile Leu Gly Val Ile Ala Ala Pro Ile Thr Ser
 100 105 110
 Gly Asp Thr Ala Phe Arg Ser Ala Arg Leu Ile Val Ala Asp Phe Leu
 115 120 125
 Lys Leu Glu Gln Lys Ser Met Arg Arg Arg Leu Tyr Ile Cys Val Pro
 130 135 140
 Met Phe Ile Val Ala Ile Gly Leu Leu Leu Tyr Ser Leu Arg Asp Lys
 145 150 155 160
 Asp Gly Phe Asp Met Ile Trp Arg Tyr Phe Ala Trp Ala Asn Gln Thr
 165 170 175
 Leu Ser Val Phe Thr Leu Trp Ala Ile Thr Val Tyr Leu Ala Arg Ala
 180 185 190
 Arg Lys Trp Tyr Gly Leu Thr Leu Val Pro Ala Leu Phe Met Thr Ala
 195 200 205
 Val Cys Ser Thr Tyr Ile Cys Ile Ala Pro Glu Gly Leu Gly Leu Ser
 210 215 220
 His Trp Val Ser Tyr Val Thr Gly Gly Leu Cys Thr Leu Ile Gly Ala
 225 230 235 240
 Val Trp Phe Ile Val Trp Lys Lys Gly Ile Gly Tyr Ser Tyr Lys Lys
 245 250 255

<210> 7546
 <211> 184
 <212> PRT
 <213> B.fragilis

<400> 7546
 Asn Ile Met Ile Tyr Leu Gln Leu Phe Tyr Thr Phe Phe Lys Ile Gly
 1 5 10 15
 Leu Phe Gly Phe Gly Gly Gly Tyr Ala Met Leu Ser Met Ile Gln Gly
 20 25 30
 Glu Val Val Thr Arg Tyr Asp Trp Val Ser Thr Gln Glu Phe Thr Asp
 35 40 45
 Ile Val Ala Ile Ser Gln Ser Thr Pro Gly Pro Ile Gly Ile Asn Ala
 50 55 60
 Ala Thr Tyr Val Gly Phe Thr Ala Thr Gly Ser Ile Trp Gly Ser Val
 65 70 75 80
 Ile Ala Thr Phe Ala Val Val Leu Pro Ser Phe Ile Leu Met Leu Thr
 85 90 95
 Ile Ser Lys Phe Phe Leu Lys Tyr Gln Lys His Pro Ala Val Glu Ala
 100 105 110
 Val Phe Cys Gly Leu Arg Pro Ala Val Val Gly Leu Leu Ala Ser Ala
 115 120 125
 Ala Leu Val Leu Met Asn Val Glu Asn Phe Gly Ser Pro Thr Asp Asp
 130 135 140
 Thr Tyr Thr Phe Val Ile Ser Ile Ile Ile Phe Leu Val Ala Phe Ile
 145 150 155 160

[illegible]

<400> 7547

Lys 1	Tyr	Met	Met	Lys 5	Asn	Lys	Leu	Ile	Leu 10	Leu	Phe	Ala	Leu	Gly 15	Leu
Cys	Ala	Gln	Val	Gln 20	Ala	Gln	Val	Pro 25	His	Leu	Ser	Arg	Glu 30	Thr	Tyr
Arg	Glu	Arg	Val	Glu 35	Ala	Tyr	Ser	Gln 40	Val	Leu	Lys	Gln 45	Gln	His	Leu
Lys	Ser	Met	Ala	Ser 50	Thr	Asp 55	Ala	Arg	Lys	Ile	Ala 60	Phe	Thr	Gly	Phe
Leu 65	Pro	Lys	Val	Asp 70	Ile	Ser	Ala	Glu	Gly 75	Thr	Leu	Asn	Leu	Lys	Glu 80
Met	Asp	Ser	Trp	Asp 85	Gly	Pro	Ala	Gly	Gln 90	Tyr	Arg	Asn	His	Thr 95	Tyr
Gln	Gly	Ile	Phe	Val 100	Val	Ser	Gln	Pro	Leu 105	Tyr	Thr	Gly	Gly 110	Ala	Leu
Gln	Ala	Gln	Asn	Arg 115	Ile	Ala	Lys	Ala	Asp 120	Glu	Lys	Leu	Asp 125	Gln	Leu
Ser	Glu	Glu	Leu	Thr 130	Arg	Asp 135	Gln	Ile	His	Tyr	Gln	Ser	Asp 140	Ala	Phe
Tyr 145	Trp	Asn	Ala	Ser 150	Ser	Ala	Arg	Ala	Met	Leu	Asn	Ala	Ser	Ala	Gln 160
Tyr	Gln	Glu	Ile	Val 165	Glu	Lys	Gln	Tyr	Glu 170	Ile	Ile	Gln	Asp 175	Arg	Phe
Lys	Asp	Gly	Ala	Ile 180	Ser	Arg	Thr	Asp 185	Leu	Leu	Met	Ile	Ser 190	Thr	Arg
Arg	Lys	Glu	Ala	Glu 195	Leu	Gln	Tyr	Ile 200	Asn	Ala	Arg	Gln	Asn 205	Tyr	Thr
Leu	Ala	Leu	Gln	Lys 210	Leu	Asn	Ile	Leu 215	Met	Gly	Glu	Glu	Pro 220	Asn	Ala
Pro 225	Val	Asp	Ser	Leu 230	Cys	Ala	Ile	Gly	Val	Val	Cys	Pro	Pro	Val	Thr 240
Leu	Leu	Pro	Leu	Asp 245	Asp	Val	Leu	Gln	Arg	Arg	Ala	Asp	Phe	Ala	Ser 255
Thr	Glu	Val	Asn	Ile 260	Gln	Lys	Ser	Glu	Ala	Gln	Arg	Lys	Ala	Ala	Leu
Ser	Gln	Tyr	Asn	Pro 275	Gln	Val	Ser	Met	Tyr	Val	Thr	Gly	Gly 285	Trp	Ala
Thr	Ala	Ser	Pro	Asn 290	Met	Gly	Tyr	Asp	Val	Lys	Phe	Thr	Pro	Ile	Val
Gly 305	Met	Ser	Val	Asn 310	Ile	Pro	Val	Leu	Arg	Trp	Gly	Ala	Arg	Phe	Lys 320
Thr	Asn	Arg	Gln	Gln 325	Lys	Ala	Tyr	Thr	Gly	Ile	Gln	Lys	Leu	Gln	Gln 335
Ser	Tyr	Val	Val	Asp 340	Gln	Ile	Asn	Gln	Glu	Leu	Ala	Ala	Ala	Leu	Thr
Lys	Leu	Lys	Glu	Thr 355	Glu	Glu	Gln	Val	Lys	Thr	Ala	Glu	Glu	Asn	Lys
Glu	Leu	Ala	Glu	Glu 370	Asn	Leu	Asp	Leu	Ile	Thr	Phe	Ser	Tyr	Asn	Glu

Gly Lys Ala Ser Met Val Asp Val Leu Ser Ala Gln Leu Ser Trp Thr
 385 390 395 400
 Gln Ala His Thr Ser Leu Ile Asn Ala Tyr Leu Ala Glu Lys Met Ala
 405 410 415
 Val Ala Glu Tyr Arg Lys Val Ile Ser Glu
 420 425

<210> 7548
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 7548
 Ile Thr Leu Val Leu Ser Asn Glu Tyr Leu Ala Lys Phe Met Ile Val
 1 5 10 15
 Tyr Gly Phe Glu Cys Thr Thr Asp Tyr Thr Asp Phe His Arg Leu Met
 20 25 30
 Ile Tyr Ile Ile Asp Asn Lys Ile Lys Lys Ser Val Leu Ile Arg Val
 35 40 45
 Ile Cys Gly Glu Ile Asn Tyr Cys Val Glu Arg Ala Leu Leu Phe Gln
 50 55 60
 Phe Leu Tyr Arg Phe Thr Phe Tyr Gln Leu Cys His Thr Gly Cys His
 65 70 75 80
 His Ser Leu Ala Cys Phe Gln Ser Phe
 85

<210> 7549
 <211> 254
 <212> PRT
 <213> B.fragilis

<400> 7549
 Ser Ser Val Leu Val Arg Leu Val Ser Thr Val Thr Glu Lys Asn Asp
 1 5 10 15
 Pro Leu Gly Ser Lys Thr Asn Gly Leu Gln Asn Tyr Asp Asp Leu Tyr
 20 25 30
 Ala Asp Val Leu Leu Trp Ala Arg Asn Gly Trp Val Asp Tyr Asn Ile
 35 40 45
 Pro Gln Ile Tyr Trp Gln Ile Gly His Pro Ala Ala Asp Tyr Glu Thr
 50 55 60
 Leu Val Lys Trp Trp Ala Lys Asn Thr Glu Asn Arg Pro Leu Phe Ile
 65 70 75 80
 Gly Gln Ser Val Met Asn Thr Ile Gln Asn Ala Asp Pro Lys Asn Pro
 85 90 95
 Ser Met Asn Gln Leu Pro Arg Lys Met Ala Leu Glu Arg Ala Tyr Gln
 100 105 110
 Thr Ile Gly Gly Ser Cys Gln Trp Pro Ala Ser Ala Val Val Glu Asn
 115 120 125
 Ala Gly Lys Tyr Arg Asp Ala Leu Val Gln Glu Tyr His Lys Tyr Pro
 130 135 140
 Ala Leu Val Pro Val Phe Asp Phe Met Asp Asp Lys Ala Pro Gly Lys
 145 150 155 160
 Val Arg Lys Val Lys Lys Val Trp Thr Glu Asp Gly Tyr Met Leu Phe
 165 170 175
 Trp Thr Ala Pro Lys Ala Lys Asp Glu Met Asp Arg Ala Val Gln Tyr
 180 185 190
 Val Val Tyr Arg Phe Asp Asp Lys Glu Lys Val Asn Ile Asp Asp Ala
 195 200 205
 Ser His Ile Val Ala Val Thr Arg Asn Asn Phe Tyr Lys Leu Pro Tyr

210		215		220
Lys Asp Gly Lys Asn Lys Tyr Arg Tyr Val Val Thr Ala Leu Asp Arg				
225		230		235
Leu His Asn Glu Ser Lys Ser Val Ser Lys Lys Val Lys Leu				240
	245		250	

<210> 7550

<211> 406

<212> PRT

<213> B.fragilis

<400> 7550

Pro His Arg Ala Ile Gly Val Arg Glu Gly Thr Ser Tyr Ile Ile Phe		
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Thr Met Lys Ile His Ile Leu Phe Gly Met Ile Gly Phe Ile Leu Leu		15
	20	25
Ser Gly Cys Asn Arg Ala Ala Glu Lys Asn Pro Arg Phe Tyr Asp Ala		30
	35	40
Gly Val Ser Arg Glu Leu Ala Gly His Arg Lys Ala Gln Ile Lys Asn		45
	50	55
Leu Lys Tyr Glu Leu Ser Phe Asn Ile Pro Arg Gln Lys Glu Ala Ala		60
65	70	75
Ile Glu Gly Asp Ile Thr Leu Arg Phe Asp Leu Ala Ser Arg Gln Glu		80
	85	90
Val Leu Ile Asp Phe Arg Glu Glu Arg Glu Lys Ile Lys Glu Val Ile		95
	100	105
Ala Asn Gly Val Pro Val Asp Lys Val Arg Phe Glu Asn Glu His Ile		110
	115	120
Ile Leu Pro Ala Ser Ser Thr Val Glu Gly Ala Asn Gly Ile Arg Ile		125
	130	135
Arg Phe Thr Ala Gly Asn Gln Ser Leu Asn Arg Asn Asp Glu Tyr Leu		140
145	150	155
Tyr Thr Leu Leu Val Pro Asp Arg Ala Arg Thr Val Phe Pro Cys Phe		160
	165	170
Glu Gln Pro Asn Leu Lys Ala Glu Phe Thr Leu Gln Leu Glu Leu Pro		175
	180	185
Ala Asp Trp Lys Ala Val Ser Asn Thr Tyr Ile Arg Ser Glu Thr Val		190
	195	200
Thr Asp Asp Arg Lys Thr Val Cys Phe Ala Pro Thr Glu Pro Leu Ser		205
	210	215
Thr Tyr Leu Phe Ser Phe Val Ala Gly Lys Leu Glu Arg Arg Glu Tyr		220
225	230	235
Thr Arg Asp Gly Arg Thr Ile Ala Ala Tyr Tyr Arg Glu Thr Asp Pro		240
	245	250
Lys Lys Val Ala Gln Leu Asp Ile Val Phe Gly Gln Val Met Ala Ser		255
	260	265
Leu His Trp Leu Glu Glu Tyr Thr Gly Ile Ala Tyr Pro Phe Ala Lys		270
	275	280
Tyr Asp Phe Ile Val Leu Pro Gly Phe Gln Phe Gly Gly Met Glu His		285
	290	295
Thr Gly Ala Thr Leu Tyr Asn Asp Asn Gly Ile Ile Leu Ser Glu His		300
305	310	315
Pro Thr Pro Asp Glu Glu Leu Asn Arg Ala Glu Leu Ile Ala His Glu		320
	325	330
Thr Ser His Met Trp Val Gly Asp Ser Gly Thr Met Asp Trp Phe Asp		335
	340	345
Asp Gly Trp Thr Lys Glu Val Phe Ala Asn Tyr Ile Ala Ala Arg Ile		350
	355	360
Val Glu Pro Leu Phe Pro Glu Ile Asn His Thr Gln Asn Lys Leu Lys		365

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370 375 380
 Thr Phe Thr Ala Ala Ile Thr Phe Arg Gly Ser Tyr Tyr Gly Asp Glu
 385 390 395 400
 Cys His Pro Ser Thr Ala
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<210> 7551
 <211> 522
 <212> PRT
 <213> B.fragilis

<400> 7551
 Leu Pro Met Lys Arg Arg Thr Cys Gly Leu Ala Ile Arg Val Pro Trp
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 Ile Gly Leu Thr Thr Asp Gly Leu Lys Lys Phe Leu Pro Thr Ile Leu
 20 25 30
 Gln Pro Gly Leu Ser Asn Pro Cys Phe Arg Arg Ser Ile Thr Pro Arg
 35 40 45
 Ile Ser Ser Arg Pro Leu Arg Gln Leu Ser Leu Ser Glu Asp Arg Thr
 50 55 60
 Met Gly Thr Asn Ala Ile Arg Gln Pro Leu Asp Asn Leu Arg Asn Ala
 65 70 75 80
 Gly Leu Ile Tyr Gly Gln Ile Ile Tyr Asn Lys Ala Pro Val Met Met
 85 90 95
 Glu Lys Leu Val Asp Lys Met Gly Glu Ala Asn Phe Arg Ser Gly Ile
 100 105 110
 Gln Glu Tyr Leu Lys Thr Tyr Ser Tyr Gly Asn Ala Thr Trp Asp Asp
 115 120 125
 Leu Ile Arg Ile Leu Asp Ser Lys Thr Thr Glu Asp Leu Ala Ala Phe
 130 135 140
 Ser Asp Val Trp Val Asn Arg Lys Gly Met Pro Thr Leu Thr Phe Arg
 145 150 155 160
 Thr Asp Gly Gln Glu Leu Glu Ile Arg Gln His Asp Pro Tyr Asn Arg
 165 170 175
 Gly Leu Leu Trp Pro Gln Arg Phe Ala Val Thr Leu Cys Gly Glu Arg
 180 185 190
 Asp Ser Val Ile Arg Val Asn Met Thr Asp Thr Leu Phe Arg Met Gln
 195 200 205
 Leu Pro Phe Val Pro Ser Arg Val Leu Pro Asn Thr Asp Gly Arg Gly
 210 215 220
 Tyr Gly Val Phe Val Pro Asp Glu Pro Ala Leu His Trp Leu Ala Ala
 225 230 235 240
 His Trp Trp Glu Ile Glu Asp Asp Thr Ala Arg Gln Ser Leu Leu Met
 245 250 255
 Val Leu Tyr Glu Asn Tyr Leu Ala Lys His Ile Ser Ala Asp Asp Trp
 260 265 270
 Val Asn Ser Leu Ile Thr Gly Leu Pro Ala Glu Lys Asn Ala Leu Val
 275 280 285
 Ala Ser Thr Ala Ser Gly Tyr Leu Ala Asn Val Met Trp Glu Ile Ala
 290 295 300
 Pro Ala Asn Arg Ala Glu Val Glu Ala Arg Ile Tyr Thr Met Thr Gln
 305 310 315 320
 Asn His Pro Leu Pro Ser Cys Arg Ile Gln Leu Met Arg Leu Phe Met
 325 330 335
 Gln Asn Ala Ile Ser Glu Pro Met Val Lys Lys Leu Tyr Ile Leu Trp
 340 345 350
 Gln Gln Gln Ser Asp Lys His Leu Asn Arg Gln Asp Tyr Thr Thr Leu
 355 360 365
 Ala Tyr Glu Leu Ala Ile Arg Met Pro Leu Glu Ser Glu Gln Ile Leu

370	375	380
Arg Thr Gln Arg Ala Arg Ile Asp Asp Pro Asp Arg Leu Arg Gln Phe		
385	390	395
Asp Phe Ile Ser Arg Ala Ala Val Ser Asp Thr Ala Arg Leu Asp Thr		
	405	410
Leu Phe Asn Ser Leu Leu Ala Ala Glu Asn Arg Arg Ile Glu Pro Trp		
	420	425
Thr Thr Ala Val Ile Arg Tyr Leu Asn His Pro Leu Arg Glu Asp Gln		
	435	440
Ser Val Lys Tyr Ile Arg Pro Gly Leu Glu Val Leu Glu Glu Val Gln		
	450	455
Arg Thr Gly Asp Ile Phe Phe Pro Lys Asn Trp Ala Ala Ala Leu Leu		
465	470	475
Gly Asn His Leu Ser Ser Ser Ala Tyr Glu Glu Val Val Arg Phe Leu		
	485	490
Asn Glu Arg Pro Asp Tyr Ser Pro Leu Leu Lys Asn Lys Ile Leu Gln		
	500	505
Ala Ala Tyr Pro Leu Tyr Arg Ala Asn Asn		510
	515	520

<210> 7552

<211> 415

<212> PRT

<213> B.fragilis

<400> 7552

Ser Arg Met Lys Glu Phe Val Ile Ser Glu Ala Lys Val Glu Thr Ala		
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Val Leu Val Gly Leu Ile Thr Gln Thr Gln Asp Glu Arg Lys Thr Asn		
	20	25
Glu Tyr Leu Asp Glu Leu Ala Phe Leu Ala Glu Thr Ala Gly Ala Glu		
	35	40
Val Val Lys Arg Phe Thr Gln Lys Leu Pro Thr Ala Asn Ser Val Thr		
	50	55
Tyr Val Gly Lys Gly Lys Leu Glu Glu Ile Lys Glu Tyr Ile Arg Ile		
65	70	75
Glu Ala Glu Glu Asp Arg Glu Val Gly Met Val Ile Phe Asp Asp Glu		
	85	90
Leu Ser Ala Lys Gln Ile Arg Asn Ile Glu Ala Glu Leu Lys Val Lys		
	100	105
Ile Leu Asp Arg Thr Ser Leu Ile Leu Asp Ile Phe Ala Met Arg Ala		
	115	120
Gln Thr Ala Asn Ala Lys Thr Gln Val Glu Leu Ala Gln Tyr Lys Tyr		
	130	135
Met Leu Pro Arg Leu Gln Arg Leu Trp Thr His Leu Glu Arg Gln Gly		
145	150	155
Gly Gly Ser Gly Ser Gly Lys Gly Gly Ser Val Gly Leu Arg Gly Pro		
	165	170
Gly Glu Thr Gln Leu Glu Met Asp Arg Arg Ile Ile Leu Asn Arg Met		
	180	185
Ser Leu Leu Lys Glu Arg Leu Ala Glu Ile Asp Lys Gln Lys Ser Thr		
	195	200
Gln Arg Lys Asn Arg Gly Arg Met Ile Arg Val Ala Leu Val Gly Tyr		
	210	215
Thr Asn Val Gly Lys Ser Thr Met Met Asn Leu Leu Ala Lys Ser Glu		
225	230	235
Val Phe Ala Glu Asn Lys Leu Phe Ala Thr Leu Asp Thr Thr Val Arg		
	245	250
Lys Val Ile Ile Asp Asn Leu Pro Phe Leu Leu Ser Asp Thr Val Gly		

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	260		265		270										
Phe	Ile	Arg	Lys	Leu	Pro	Thr	Asp	Leu	Val	Asp	Ser	Phe	Lys	Ser	Thr
	275						280					285			
Leu	Asp	Glu	Val	Arg	Glu	Ala	Asp	Leu	Leu	Val	His	Val	Val	Asp	Ile
	290						295					300			
Ser	His	Pro	Gly	Phe	Glu	Glu	Gln	Ile	Glu	Val	Val	Asn	Lys	Thr	Leu
305					310						315				320
Ala	Asp	Ile	Gly	Gly	Gly	Gly	Lys	Pro	Met	Ile	Leu	Ile	Phe	Asn	Lys
			325						330					335	
Ile	Asp	Ala	Tyr	Thr	Tyr	Val	Glu	Lys	Ala	Leu	Asp	Asp	Leu	Thr	Pro
		340						345					350		
Lys	Thr	Lys	Glu	Asn	Leu	Thr	Leu	Glu	Glu	Leu	Met	Lys	Thr	Trp	Met
		355						360					365		
Ala	Lys	Met	Glu	Asp	Asn	Cys	Leu	Phe	Ile	Ser	Ala	Arg	Glu	Lys	Ile
	370					375					380				
Asn	Ile	Asp	Glu	Leu	Lys	Ser	Val	Val	Tyr	Gln	Arg	Val	Lys	Glu	Leu
385					390					395					400
His	Val	Gln	Lys	Tyr	Pro	Tyr	Asn	Asp	Phe	Leu	Tyr	Gln	Thr	Tyr	
			405						410					415	

<210> 7553

<211> 470

<212> PRT

<213> B.fragilis

<400> 7553

Gln	Ile	Lys	Glu	Thr	Thr	Met	Lys	Lys	Ile	Ile	Leu	Phe	Ser	Thr	Leu
1				5					10					15	
Cys	Ala	Ser	Leu	Phe	Leu	Gly	Ser	Cys	Ser	Ser	Ser	Phe	Leu	Asp	Gln
			20					25				30			
Glu	Pro	Pro	Leu	Tyr	Val	Asn	Glu	Asn	Asp	Ile	Phe	Thr	Ser	Pro	Thr
		35					40					45			
Arg	Ile	Glu	Ala	Thr	Leu	Asn	Gly	Leu	Tyr	Ala	Ala	Ile	Lys	Asn	Thr
	50					55				60					
Gly	Thr	Lys	Ser	Leu	Met	Gly	Gly	Lys	Ser	Tyr	Leu	Val	Phe	Asp	Asn
65				70					75					80	
Arg	Gly	Asp	Asp	Val	Ile	Asn	Ile	Ser	Asn	Asn	Leu	Val	Thr	Leu	Phe
			85						90					95	
Asn	Thr	Tyr	Asn	Met	Asn	Val	Gly	Ile	Thr	Asp	Ala	Glu	Asn	Ala	Asp
			100					105					110		
Thr	Trp	Thr	Tyr	Ala	Tyr	Leu	Ala	Ile	Asn	Lys	Val	Asn	Thr	Phe	Leu
		115					120					125			
Gln	Ser	Leu	Glu	Gly	Ala	Arg	Glu	Val	Ala	Gly	Glu	Asn	Tyr	Asp	Arg
	130					135					140				
Tyr	Val	Gln	Glu	Ala	Lys	Phe	Val	Arg	Ala	Leu	Ala	Tyr	Tyr	Tyr	Leu
145					150					155					160
Asn	Asn	Leu	Tyr	Pro	Thr	Pro	Tyr	Ser	Val	Asn	Pro	Asp	Ala	Lys	Ser
				165					170					175	
Val	Pro	Leu	Arg	Leu	Thr	Ala	Glu	Ala	Gly	Thr	Glu	Asn	Asn	Asn	Met
		180						185					190		
Pro	Arg	Ser	Thr	Val	Lys	Gln	Ile	Tyr	Glu	His	Ile	Leu	Ser	Asp	Leu
	195						200					205			
Glu	Asn	Ile	Ser	Ala	Leu	Asp	Thr	Glu	Val	Asn	Thr	Thr	Gly	Val	
	210					215					220				
Thr	His	Ala	Thr	Gln	Ala	Ala	Ala	Asn	Met	Leu	Lys	Met	Arg	Val	Tyr
225				230						235					240
Met	Ala	Met	Asn	Glu	Trp	Asp	Lys	Ala	Ile	Thr	Ala	Gly	Glu	Leu	Val
			245						250					255	
Thr	Gly	Tyr	Ser	Leu	Pro	Glu	Asp	Val	Thr	Leu	Ile	Tyr	Lys	Ala	Pro

0373

<400> 7554

Phe 1	Val	Val	Cys	Asn 5	Lys	Arg	Ser	Met	Gly 10	Lys	Thr	Tyr	Arg	Arg 15	Leu
Thr	Glu	Asp	Glu	Val	Leu	His	Leu	Lys 25	Ser	Gln	Ser	Cys	Leu	Ala	Asp
Asp	Trp	Asn	Lys	Val	Ala	Val	Ala	Glu	Glu	Phe	Thr	Thr	Glu	Phe	Val
His	His	Thr	Arg	Phe	Ser	Gly	Glu	Val	Lys	Leu	Gly	Val	Phe	His	Ser
Asp 65	Phe	Ile	Leu	Pro	Gly	Gly	Ile	Lys	Lys	His	Ser	Gly	Leu	Arg	His
Val	Thr	Leu	His	Asn	Val	Thr	Val	Gly	Asp	Asn	Cys	Cys	Ile	Glu	Asn
Ile	Gln	Asn	Tyr	Ile	Ala	Asn	Tyr	Glu	Ile	Gly	Asn	Asn	Thr	Phe	Ile
Glu	Asn	Val	Asp	Ile	Ile	Leu	Val	Asp	Gly	Leu	Thr	Gln	Phe	Gly	Asn
Gly	Val	Glu	Thr	Ala	Val	Leu	Asn	Glu	Thr	Gly	Gly	Arg	Glu	Val	Leu
Ile 145	Asn	Asp	Lys	Leu	Ser	Ala	His	Gln	Ala	Tyr	Ile	Leu	Ala	Leu	Tyr
Arg	His	Arg	Pro	Glu	Leu	Ile	Ser	Arg	Met	Lys	Glu	Ile	Thr	Asp	Tyr
Tyr	Ser	Asn	Lys	His	Ala	Ser	Ala	Val	Gly	Thr	Ile	Gly	Asn	His	Val
Met	Ile	Leu	Asn	Thr	Gly	Ser	Ile	Lys	Asn	Val	Arg	Ile	Gly	Asp	Phe

[illegible]

<400> 7555

Arg	Gly	Cys	Arg	Ala	Arg	Leu	Arg	Lys	Ser	Thr	Leu	Ile	Arg	Val	Pro
1				5					10					15	
Lys	Ile	Lys	Asn	Ser	Ser	Leu	Asn	Ser	Gly	Ile	Arg	Tyr	Tyr	Glu	Ile
			20					25					30		
Ala	Ile	His	Lys	Phe	Leu	Gly	Asn	Ser	Ile	Ile	Lys	Arg	Leu	Glu	Gly
		35					40					45			
Ile	Asn	Phe	Lys	Asp	Asn	Glu	Glu	Ile	Arg	Arg	Arg	Leu	Lys	Pro	Asp
	50					55				60					
Thr	Glu	Ile	Gly	Val	Gly	Glu	Trp	Val	Asp	Ile	Ala	Gly	Leu	Ile	Ala
65					70				75						80
Pro	Lys	Ser	Glu	Val	Glu	Lys	Leu	Ile	Asp	Gly	Ile	Glu	Ser	Gly	Glu
				85					90					95	
Ile	Asn	Arg	Leu	Lys	Ser	Met	Asn	Ala	Cys	Phe	Ala	Ala	Met	His	Asp
			100					105					110		
Asn	Tyr	Tyr	Thr	Tyr	Glu	Trp	Thr	Trp	Ala	Tyr	His	Lys	Ile	Gln	Glu
		115					120					125			
Phe	Tyr	Gly	Leu	Asn	Pro	Glu	Thr	Ile	Thr	Ala	Lys	Asp	Ile	Ile	Ala

130	Ile Val Arg Ala Trp	135	Arg Glu Ala Val Val Gly	140	Leu Asp Arg Met Val
145	Tyr Asp Asp Ala Arg	150	Lys Glu Phe Ser Leu Ser	155	Ser Met Thr Gly Phe
		165		170	
	Gly Ala Asp Gly Ser	175	Arg Asp Glu Met Lys	180	Leu Asp Phe Gly Gln Val
		185		190	
	Arg Gly Asp Phe Glu	195	Ser Asn Pro Phe Val	200	Thr Ala Val Leu Lys His
		205		210	
	Ile Asp Asp Lys Thr	215	Ala Leu Gly Glu Glu	220	Leu Ile Asn Arg Ile Gly
	Gln Leu Ala				
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 <212> PRT
 <213> B.fragilis

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	Gln Thr Ala Glu Val	Ala Ile Ala Pro	Val Ile Lys Val	Ile Leu Lys	
		20		25	30
	Thr Asp Ser Lys Ala	Leu Asp Glu Val	Val Val Val Ala	Tyr Gly Thr	
		35		40	45
	Gln Ser Ala Arg Thr	Val Thr Ala Ser	Val Ser Thr Val	Arg Ala Asp	
		50		55	60
	Ala Leu Lys Asp Val	Pro Ser Val Ser	Phe Asp Gln Met	Leu Gln Gly	
		65		70	75
	Arg Ala Ser Gly Val	Ser Ile Thr Thr	Pro Ser Ala Gly	Val Gly Gln	
		85		90	95
	Ala Pro Ile Val Arg	Val Arg Gly Val	Asn Ser Ile Thr	Ser Gly Thr	
		100		105	110
	Ser Pro Leu Tyr Val	Val Asp Gly Val	Pro Ile Glu Ser	Gly Asn Leu	
		115		120	125
	Ser Tyr Leu Ala Asn	Ala Asn Ala Leu	Ala Asp Ile Asn	Pro Ala Asp	
		130		135	140
	Ile Val Ser Met Asp	Val Leu Lys Asp	Ala Ala Ala Ala	Leu Tyr	
		145		150	155
	Gly Ser Arg Ala Ala	Asn Gly Val Ile	Leu Ile Thr Thr	Lys Gln Gly	
		165		170	175
	Gln Ser Gly Lys Val	Lys Val Ser Tyr	Asp Gly Phe Val	Gly Phe Ser	
		180		185	190
	Asn Ala Thr Asp Phe	Tyr Glu Met Met	Asn Ala Gln Glu	Tyr Val Asp	
		195		200	205
	Phe Lys Asn Leu Ala	Val Lys Asn Arg	Tyr Gly Thr Asp	Glu Leu Ser	
		210		215	220
	Leu Thr Thr Gly Tyr	Val Ser Pro Tyr	Gly Asn Lys Ala	Phe Asn Met	
		225		230	235
	Met Lys Asp Ala Asn	Gly Asn Tyr Val	Asp Thr Asp Trp	Lys Asp Ala	
		245		250	255
	Ala Phe Gln Asn Gly	Leu Ser Gln Ser	His Ser Val Ala	Val Ser Gly	
		260		265	270
	Gly Ser Asp Lys Val	Arg Tyr Tyr Leu	Ser Gly Asn Tyr	Thr Thr Gln	
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	Glu Gly Ile Val Lys	Gly Asp Lys Tyr	Asp Arg Leu Gly	Val Lys Ala	
		290		295	300
	Asn Ile Asn Val Gln	Ala Thr Asp Trp	Leu Lys Val Gly	Met Asn Thr	

305	Asn	Val	Thr	Thr	Gly	Thr	Thr	Ser	Tyr	Val	Asp	Ala	Ala	Arg	Arg	Gly	320
					325					330						335	
Ser	Asn	Phe	Ala	Val	Gly	Gly	Phe	Pro	Arg	Leu	Ala	Leu	Ile	Asn	Ala		
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Pro	Asn	Leu	Pro	Met	Tyr	Asn	Glu	Asp	Gly	Thr	Pro	Tyr	Tyr	Leu	Ala		
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Gln	Gly	Leu	Gly	Tyr	Gly	Gly	Asn	Thr	Val	Phe	Ser	Thr	Phe	Ser	Asn		
	370				375					380							
Pro	Ala	Ala	Ile	Leu	Ser	Leu	Gly	Asn	Gly	Leu	Ser	Ser	Asp	Val	Thr		
385					390				395						400		
Arg	Phe	Ile	Gly	Val	Phe	Tyr	Ala	Glu	Ala	Thr	Pro	Leu	Lys	Gly	Leu		
			405					410						415			
Ser	Leu	Lys	Thr	Gln	Tyr	Gly	Val	Asp	Tyr	Ala	Arg	Ile	Glu	Glu	Gln		
			420					425					430				
Arg	Phe	Trp	Ser	Pro	Leu	His	Gly	Asp	Gly	Val	Asn	Ser	Lys	Gly	Leu		
	435						440				445						
Ala	Asn	Ala	Tyr	Asn	Thr	Lys	Asn	Asn	Arg	Trp	Thr	Trp	Thr	Asn	Thr		
	450				455				460								
Ala	Thr	Tyr	Asn	Phe	Ser	Leu	Gly	Gln	Asn	Asn	Phe	Asn	Leu	Leu	Ala		
465					470				475						480		
Gly	Thr	Glu	Ala	Ser	Glu	Arg	Asn	Asn	Ser	Arg	Trp	Thr	Ala	Gln	Arg		
			485					490						495			
Lys	Asp	Leu	Gln	Asp	Asp	Lys	Phe	Val	Val	Phe	Gln	Gly	Pro	Phe	Gly		
		500					505					510					
Ser	Ala	Thr	Ala	Gly	Gly	Ser	Leu	Ser	Asn	Asn	Thr	Met	Val	Ser	Tyr		
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Phe	Gly	Arg	Ile	Asn	Tyr	Asp	Tyr	Ala	Ser	Lys	Tyr	Ile	Val	Ser	Leu		
	530					535					540						
Asn	Tyr	Arg	Arg	Asp	Gly	Tyr	Ser	Ala	Leu	Ser	Glu	Lys	Asn	Arg	Trp		
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Gly	Asn	Phe	Gly	Gly	Val	Ser	Ala	Ala	Trp	Arg	Val	Ser	Glu	Glu	Gly		
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Phe	Phe	Lys	Pro	Leu	Arg	Asn	Val	Val	Asp	Asp	Leu	Lys	Ile	Lys	Gly		
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Ser	Tyr	Gly	Val	Val	Gly	Asn	Thr	Asp	Ile	Tyr	Asp	Tyr	Ala	Ser	Lys		
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Ser	Phe	Tyr	Ser	Ser	Tyr	Asn	Tyr	Gly	Ile	Asn	Gly	Thr	Tyr	Gly	Leu		
	610					615					620						
Ala	Gln	Ile	Ala	Asp	Pro	Asn	Leu	Lys	Trp	Glu	Ser	Ser	Glu	Lys	Tyr		
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Ser	Ile	Gly	Phe	Asn	Ala	Arg	Leu	Leu	Asp	Arg	Ile	Ser	Val	Asp	Phe		
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Asp	Tyr	Tyr	Tyr	Thr	Lys	Ser	Ser	Asp	Leu	Ile	Leu	Asp	Val	Pro	Gln		
		660					665					670					
Ser	Pro	Ser	Lys	Gly	Ile	Pro	Gly	Asn	Ile	Ile	Thr	Thr	Asn	Ala	Gly		
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Lys	Met	Lys	Asn	Ser	Gly	Ile	Glu	Leu	Thr	Val	Ser	Ala	Asp	Val	Ile		
	690				695				700								
Arg	Asn	Ser	Gln	Phe	Thr	Trp	Glu	Thr	Ser	Phe	Asn	Ile	Thr	Thr	Asn		
705					710				715						720		
Lys	Asn	Lys	Val	Ile	Ser	Leu	Ala	Asp	Gly	Val	Glu	Asn	Ile	Leu	Lys		
			725					730						735			
Gly	Asp	Asn	Gly	Gly	Leu	Glu	Ile	Thr	Asn	Ile	Thr	Val	Pro	Gly	Lys		
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Ser	Ile	Gly	Arg	Leu	Tyr	Leu	Tyr	Pro	Thr	Ala	Gly	Val	Asp	Pro	Lys		
	755					760					765						
Ser	Gly	Arg	Arg	Val	Phe	Ile	Thr	Pro	Glu	Gly	Asp	Arg	Thr	Leu	Leu		
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1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

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Gln	Pro	Met	Phe 20	Glu	His	Gly	Glu	Asp 25	Lys	Thr	Glu	Tyr	Tyr	Leu	Leu
Thr	Lys	Asp 35	Tyr	Val	Ser	Val	Ser 40	Glu	Phe	Glu	Gly	Thr 45	Pro	Val	Leu
Lys	Val	Gln	Lys	Glu	Gly	Leu 55	Thr	Ala	Met	Ala	Asn 60	Thr	Ala	Phe	Arg
Asp 65	Val	Ser	Phe	Met	Leu 70	Arg	Arg	Ala	His	Asn 75	Glu	Gln	Val	Ala	Lys
Ile	Leu	Ser	Asp	Pro 85	Glu	Ala	Ser	Glu	Asn 90	Asp	Lys	Tyr	Val	Ala	Leu
Thr	Phe	Leu	Arg 100	Asn	Ala	Glu	Val	Ala 105	Ala	Lys	Gly	Ile 110	Leu	Pro	Phe
Cys	Gln	Asp 115	Thr	Gly	Thr	Ala	Ile 120	Ile	His	Gly	Glu	Lys 125	Gly	Gln	Gln
Val	Trp 130	Thr	Gly	Tyr	Cys	Asp 135	Glu	Glu	Ala	Leu	Ser 140	Leu	Gly	Val	Tyr
Lys 145	Thr	Tyr	Thr	Glu	Glu 150	Asn	Leu	Arg	Tyr	Ser 155	Gln	Asn	Ala	Pro	Leu
Asn	Met	Tyr	Asp 165	Glu	Val	Asn	Thr	Lys	Cys 170	Asn	Leu	Pro	Ala	Gln	Ile
Asp	Ile	Glu	Ala 180	Thr	Glu	Gly	Met	Glu 185	Tyr	Lys	Phe	Leu	Cys 190	Val	Thr
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Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				20					25					30	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				35					40					45	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				50					55					60	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
65				70					75					80	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				85					90					95	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				100					105					110	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				115					120					125	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				130					135					140	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
145				150					155					160	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Ile	Pro	Thr	Cys
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Lys Met

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<400> 7559

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 35 40 45
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 50 55 60
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 65 70 75 80
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 115 120 125
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1				5					10					15	
Val	Ala	Val	Asp	Ala	Ala	Leu	Lys	Ala	Gly	Glu	Glu	Ile	Leu	Ser	Ile
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Tyr	Thr	Asp	Pro	Ala	Ser	Asp	Phe	Glu	Ile	Glu	Arg	Lys	Ala	Asp	His

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<213> B.fragilis
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Gln	Ser	Gly	Ser	Leu	Pro	Lys	Pro	Glu	Glu	Val	Ile	Lys	Asp	Ala	Thr
			20					25					30		
Val	Lys	Lys	Ala	Leu	Glu	Glu	Ala	Trp	Ser	Asp	Met	Leu	Lys	Arg	Ser
		35					40					45			
Thr	Glu	Val	Gln	Arg	Gln	Glu	Val	Gly	Phe	Trp	Ile	Tyr	Tyr	Asp	Pro
	50					55					60				
Val	Lys	Lys	Gln	Tyr	Tyr	Ile	Gly	Lys	Lys	Arg	Tyr	Gly	Met	Ala	Val
65				70						75					80
Lys	Asn	Asp	Gly	Lys	Ala	Arg	Gly	Asn	Ile	Ser	Leu	Gly	Asp	Lys	Ser
			85						90					95	
Pro	Ser	Ile	Asn	Gly	Val	Pro	Ala	Thr	Ala	Lys	Val	Val	Ala	Ser	Phe
			100					105					110		
His	Thr	His	Thr	Pro	Met	Thr	Glu	Ile	Lys	Gly	Lys	Lys	Arg	Lys	Ala
		115					120					125			
Gly	Pro	Ser	Lys	Glu	Asp	Lys	Glu	Asn	Ala	Asp	Lys	Asn	Lys	Ile	Pro
	130					135					140				
Ile	Asp	Ile	Leu	Val	Phe	Arg	Cys	Ile	Leu	Glu	Ile	Val	Ile	Tyr	
145				150						155					

[illegible]

Leu 1	Phe	Ala	Phe	Met 5	Thr	Phe	Glu	Ile	Ala 10	Phe	Val	Leu	Leu	Ser 15	Leu
Leu	Gly	Met	Val 20	Ile	Ala	Leu	Ile	Leu 25	Asp	Lys	Met	Arg	Pro 30	Gly	Met
Ile	Leu	Phe 35	Ser	Val	Val	Val	Leu 40	Phe	Leu	Cys	Ala 45	Gly	Ile	Leu	Thr
Pro	Lys 50	Glu	Met	Leu	Glu	Gly 55	Phe	Ser	Asn	Lys	Gly 60	Met	Ile	Thr	Val
Ala 65	Leu	Leu	Phe	Leu	Val 70	Ser	Glu	Gly	Ile	Arg 75	Gln	Ser	Gly	Ala	Leu 80
Gly	Gln	Val	Val 85	Lys	Lys	Leu	Leu	Pro	Gln 90	Lys	Arg	Thr	Thr 95	Val	Phe
Arg	Ala	Gln	Leu 100	Arg	Leu	Leu	Pro	Ala 105	Val	Ala	Phe	Ile	Ser 110	Ala	Phe
Leu	Asn	Asn 115	Thr	Pro	Val	Val	Val 120	Ile	Phe	Ala	Pro	Ile 125	Ile	Lys	Arg
Trp	Ala 130	Arg	Thr	Val	His	Leu 135	Pro	Ala	Thr	Lys	Phe 140	Leu	Ile	Pro	Leu
Ser 145	Tyr	Val	Thr	Ile	Leu 150	Gly	Gly	Ile	Cys	Thr 155	Leu	Ile	Gly	Thr	Ser 160
Thr	Asn	Leu	Val 165	Val	His	Gly	Met	Ile	Leu 170	Glu	Ser	Gly 175	His	Glu	Gly
Phe	Thr	Met 180	Phe	Glu	Leu	Gly	Lys	Val 185	Gly	Leu	Phe	Ile 190	Ala	Ile	Ala
Gly	Ile	Ile 195	Tyr	Leu	Phe	Ala	Phe 200	Ser	Lys	Lys	Leu 205	Leu	Pro	Asp	Ala
Arg	Pro 210	Asp	Thr	Ala	Val	Pro 215	Asp	Glu	Glu	Val	Glu 220	Glu	Gly	Asp	Lys
Leu 225	His	Arg	Val	Glu	Ala 230	Val	Leu	Gly	Ala	Arg 235	Phe	Pro	Gly	Ile	Asn 240
Lys	Thr	Leu	Gly 245	Glu	Phe	Asn	Phe	Lys	Arg 250	His	Tyr	Gly	Ala 255	Glu	Val
Lys	Glu	Ile	Lys 260	Lys	Arg	Asn	Gly	Gln 265	Arg	Phe	Ile	Asn 270	Asn	Leu	Glu
Glu	Val	Ile 275	Leu	Arg	Glu	Gly	Asp 280	Thr	Leu	Val	Val 285	Met	Ala	Asp	Asp
Thr	Phe 290	Ile	Pro	Thr	Trp	Gly 295	Glu	Ser	Ser	Val	Phe 300	Val	Leu	Leu	Ala
Asn 305	Gly	Asn	Asp	Asn	Glu 310	Pro	Ile	Pro	Gly	Lys 315	Gly	Lys	Arg	Trp	Phe 320
Ala	Leu	Ile	Leu 325	Leu	Ile	Leu	Met	Ile	Ala 330	Gly	Ala	Thr	Ile 335	Gly	Glu
Leu	Pro	Val	Val 340	Lys	Glu	Met	Phe	Pro 345	Asp	Met	Lys	Leu 350	Asp	Met	Phe
Phe	Phe 355	Val	Ser	Val	Thr	Thr	Ile 360	Ile	Met	Ala	Trp	Thr 365	Lys	Ile	Phe
Pro	Ala 370	Arg	Lys	Tyr	Thr	Lys 375	Tyr	Ile	Ser	Trp	Asp 380	Ile	Leu	Ile	Thr
Ile 385	Ala	Cys	Ala	Phe	Ala 390	Ile	Ser	Lys	Ala	Met 395	Val	Asn	Ser	Gly	Val 400
Ala	Asp	Lys	Val 405	Ala	Gly	Phe	Ile	Ile	Gly 410	Met	Ser	His	Asp 415	Tyr	Gly
Pro	His	Val	Leu	Leu	Ala	Val	Leu	Phe	Ile	Ile	Thr	Asn	Leu	Phe	Thr

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 450 455 460
 Val Ile Cys Met Ala Ala Ser Ala Ser Phe Ser Thr Pro Ile Gly Tyr
 465 470 475 480
 Gln Thr Asn Leu Ile Val Gln Gly Ile Gly Asn Tyr Lys Phe Met Asp
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 35 40 45
 Asp Tyr Lys Ser Ser Thr Arg Asp Ile Val Glu Phe Tyr Asn Leu Arg
 50 55 60
 Gly Gly Lys Glu Arg Ile Phe Asp Asp Met Asn Asn Gly Phe Gly Trp
 65 70 75 80
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 115 120 125
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 35 40 45
 Met Leu Gly Ala Asn Phe Met Asn Lys Glu Ile Thr Pro Pro Thr Trp
 50 55 60
 Tyr Tyr His Thr Tyr Asn Tyr Tyr Leu Asn Val Thr Ile Leu Pro Trp
 65 70 75 80

Met Glu Val Ala Tyr Thr Cys Thr Leu Phe Lys Ala Glu Ala Leu Gly
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Leu Lys Pro Tyr Gly Tyr Ser Gly Phe Thr Asn Gln Asp Arg Tyr Phe
100 105 110
Ser Leu Arg Leu Arg Ala Leu Lys Glu Gly Gln Phe Trp Lys Tyr Met
115 120 125
Pro Ala Val Val Val Gly Thr Ser Asp Pro Phe Thr Ser Ser Gly Asn
130 135 140
Gly Val Val Ala Pro Thr Glu Gly Asn Gly Tyr Phe Ser Arg Phe Tyr
145 150 155 160
Ile Ala Ala Thr Arg His Val Gln Leu Gly Arg Glu Thr Val Gly Val
165 170 175
His Leu Ser Tyr Leu Tyr Asn Lys Arg Ile Glu Tyr Lys Leu Asn Gly
180 185 190
Ile Ala Ala Gly Ile Ser Tyr Asn Pro Ser Phe His Pro Gln Leu Arg
195 200 205
Leu Ile Ala Glu Tyr Asp Ser Lys Asp Phe Ala Leu Gly Ala Thr Tyr
210 215 220
Leu Leu Phe Asn His Leu His Ala Gln Val Glu Leu Gln Arg Met Lys
225 230 235 240
Tyr Phe Thr Gly Gly Leu Thr Phe Gln Phe Arg Leu Ser Gly Lys Asp
245 250 255
Gly Met Lys Lys Gln Lys Arg Asn Lys Glu Leu Lys Gln Lys Met Lys
260 265 270

<210> 7568

<211> 391

<212> PRT

<213> B.fragilis

<400> 7568

Leu Phe Asn Thr Lys Thr Ile Met Asp Ile Glu His Val Arg Ser Arg
1 5 10 15
Phe Ile Lys His Phe Asp Gly Thr Thr Gly Phe Val Tyr Ala Ser Pro
20 25 30
Gly Arg Ile Asn Leu Ile Gly Glu His Thr Asp Tyr Asn Gly Gly Phe
35 40 45
Val Phe Pro Gly Ala Ile Asp Lys Gly Met Ile Ala Glu Ile Lys Pro
50 55 60
Asn Gly Thr Asp Lys Val Asn Ala Tyr Ser Ile Asp Leu Lys Asp Tyr
65 70 75 80
Val Thr Phe Gly Leu Asn Glu Glu Asp Ala Pro Arg Ala Ser Trp Ala
85 90 95
Arg Tyr Ile Phe Gly Val Cys Arg Glu Met Ile Lys Arg Gly Val Asp
100 105 110
Val Lys Gly Phe Asn Thr Ala Phe Ser Gly Asp Val Pro Leu Gly Ala
115 120 125
Gly Met Ser Ser Ser Ala Ala Leu Glu Ser Thr Tyr Ala Phe Ala Leu
130 135 140
Asn Asp Leu Phe Gly Glu Asn Lys Ile Asp Lys Phe Glu Leu Ala Lys
145 150 155 160
Ile Gly Gln Ala Thr Glu His Asn Tyr Cys Gly Val Asn Cys Gly Ile
165 170 175
Met Asp Gln Phe Ala Ser Val Phe Gly Lys Glu Gly Ser Leu Ile Arg
180 185 190
Leu Asp Cys Arg Ser Leu Glu Tyr Gln Tyr Phe Pro Phe Lys Pro Glu
195 200 205
Gly Tyr Arg Leu Val Leu Leu Asp Ser Val Val Lys His Glu Leu Ala
210 215 220

Ser Ser Ala Tyr Asn Lys Arg Arg Gln Ser Cys Glu Ala Ala Val Ala
 225 230 235 240
 Ala Ile Gln Lys Lys His Pro His Val Glu Phe Leu Arg Asp Cys Thr
 245 250 255
 Met Asp Met Leu Ala Glu Ala Lys Ala Asp Ile Ser Glu Glu Asp Tyr
 260 265 270
 Met Arg Ala Glu Tyr Val Ile Glu Glu Ile Gln Arg Val Leu Asp Val
 275 280 285
 Cys Asp Ala Leu Glu Arg Gly Asp Tyr Glu Thr Val Gly Gln Lys Met
 290 295 300
 Tyr Glu Thr His His Gly Met Ser Lys Leu Tyr Glu Val Ser Cys Glu
 305 310 315 320
 Glu Leu Asp Phe Leu Asn Asp Cys Ala Lys Glu Cys Gly Val Thr Gly
 325 330 335
 Ser Arg Val Met Gly Gly Gly Phe Gly Gly Cys Thr Ile Asn Leu Val
 340 345 350
 Lys Asp Glu Leu Tyr Asp Asn Phe Ile Glu Lys Ala Lys Glu Ser Phe
 355 360 365
 Lys Ala Lys Phe Gly Arg Ser Pro Lys Val Tyr Asp Val Val Ile Ser
 370 375 380
 Asp Gly Ser Arg Arg Leu Val
 385 390

<210> 7569
 <211> 376
 <212> PRT
 <213> B.fragilis

<400> 7569
 Lys Gln Lys Thr Met Lys Ser Lys Leu Val Ile Leu Ser Leu Leu Leu
 1 5 10 15
 Ala Gly Ala Thr Ala Ala Thr Ala Gln Thr Lys Glu Thr Phe Tyr Ser
 20 25 30
 Glu Ser Phe Lys Asp Asn Ile Phe Val Ser Val Gly Val Gly Ala Gln
 35 40 45
 Gly Cys Val Asn Pro Asp Asn Phe Asp Tyr Gly Phe Gly Lys Ala Ile
 50 55 60
 Thr Pro Leu Ile Asn Val Ser Val Gly Lys Leu Phe Asn Pro Val Trp
 65 70 75 80
 Gly Ile Arg Gly Gln Val Ala Gly Ala Trp Thr Thr Leu Tyr Ser Asn
 85 90 95
 Tyr Gly Gln Pro Ala Asp Thr Tyr Ile Lys Ser Lys Asn Lys His Tyr
 100 105 110
 Phe Thr Met Arg Ala Asp Gly Met Phe Asn Leu Ser Asn Ala Ile Gly
 115 120 125
 Gly Tyr Asn Pro Asp Arg Leu Phe Thr Val Ser Val Phe Ala Gly Pro
 130 135 140
 Gly Leu Thr Phe Ala Lys Ala Tyr Gly Asp Gln Asp Lys Val Asn Ala
 145 150 155 160
 Leu Ile Asn Gly Ser Val Gly Leu Ala Gly Gln Phe Asn Ile Asn Lys
 165 170 175
 Tyr Leu Asp Ile Asn Ile Glu Ala Arg Gly Glu Val Ser Pro Ser Pro
 180 185 190
 Phe Gly Asn Ile Ser Ser Ala His Thr Asp Gly Ala Val Ser Leu Thr
 195 200 205
 Ala Gly Val Thr Tyr Thr Phe Gly Gly Lys Arg Phe Val Ser Cys Gly
 210 215 220
 Ser Gln Val Asp Gln Asn Ala Ile Asn Glu Glu Leu Asn Arg Tyr Arg
 225 230 235 240


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<210> 7570
<211> 280
<212> PRT
<213> B.fragilis
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Thr	Asn	Leu	Ala	Ala	Met	Lys	Ser	Asn	Trp	Lys	Pro	Lys	Tyr	Leu	Lys
1				5					10					15	
Tyr	Val	Val	Leu	Gly	Leu	Ile	Ser	Ala	Leu	Val	Val	Thr	Cys	Trp	Pro
			20					25					30		
Arg	Lys	Glu	Lys	Pro	Gln	Gly	His	Pro	Arg	Asp	Tyr	Ala	Glu	Ile	Lys
		35					40					45			
Glu	Ser	Gly	Ile	Leu	His	Ala	Ala	Thr	Glu	Tyr	Asn	Ser	Ile	Ser	Phe
	50					55					60				
Tyr	Val	Asp	Gly	Asp	Thr	Val	Ser	Gly	Phe	His	Tyr	Glu	Leu	Ile	Glu
65					70					75					80
Ala	Phe	Ala	Arg	Asp	Lys	Gly	Leu	Gln	Val	Gln	Val	Ser	Pro	Val	Met
			85					90					95		
Ser	Phe	Asn	Gln	Arg	Leu	Glu	Gly	Leu	Ala	Asp	Gly	Thr	Tyr	Asp	Val
			100					105					110		
Val	Ala	Tyr	Gly	Ile	Pro	Ala	Thr	Ser	Glu	Leu	Lys	Asp	Ser	Leu	Leu
		115					120					125			
Leu	Thr	Ser	Pro	Ile	Ile	Leu	Ser	Lys	Gln	Val	Leu	Val	Gln	Arg	Lys
						135					140				
Val	Gly	Glu	Asn	Asp	Ser	Leu	Ala	Ile	Arg	Ser	Gln	Leu	Asp	Leu	Ala
145					150					155					160
Gly	Lys	Thr	Leu	Asn	Val	Val	Lys	Gly	Ser	Pro	Ser	Ile	Leu	Arg	Ile
				165					170					175	
Arg	Asn	Leu	Ser	Asn	Glu	Ile	Gly	Asp	Thr	Ile	Tyr	Val	Asn	Glu	Ile
			180					185					190		
Glu	Lys	Tyr	Gly	Ser	Glu	Gln	Leu	Ile	Ala	Met	Val	Ala	His	Gly	Asp
		195					200					205			
Ile	Asp	Tyr	Ala	Val	Cys	Asp	Glu	Gly	Ile	Ala	Arg	Met	Ala	Val	Asp
	210					215					220				
Ser	Leu	Pro	Gln	Leu	Asp	Ile	Asn	Thr	Ala	Ile	Ser	Phe	Thr	Gln	Phe
225					230					235					240
Tyr	Ser	Trp	Gly	Val	Ser	Lys	Gln	Ser	Pro	Ala	Leu	Leu	Asp	Ser	Leu
				245					250					255	
Asn	Thr	Trp	Leu	Ser	Asp	Phe	Arg	Lys	Lys	Gly	Glu	Tyr	Gln	Ser	Val
			260					265					270		

Tyr Arg Lys Tyr Tyr Gly Lys Gln
275 280

<210> 7571
<211> 90
<212> PRT
<213> B.fragilis

<400> 7571
Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1 5 10 15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
20 25 30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
35 40 45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
50 55 60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Leu
65 70 75 80
Val Ser Ser Tyr Pro Ser Tyr Met Gln Leu
85 90

<210> 7572
<211> 64
<212> PRT
<213> B.fragilis

<400> 7572
Lys Asn Leu Phe Gly Asn Phe Gly Ser Asp Gly Cys Cys Leu Pro Val
1 5 10 15
Lys Lys Val Ser Cys Glu Gly Cys Leu Leu Phe Cys Phe Thr Thr Trp
20 25 30
Val Asp Thr Leu Phe Ile Asp Asn Ile Lys Thr Gly Ser Gln Asn Ile
35 40 45
Met Tyr Leu Cys Gly Met Thr Asn Thr Leu Arg Ser Asp Leu Val Leu
50 55 60

<210> 7573
<211> 364
<212> PRT
<213> B.fragilis

<400> 7573
Ile Phe Asn Phe Ile Glu Met Lys Met Lys Ser Lys Phe Phe Gly Asn
1 5 10 15
Gly Ala Lys Leu Ala Leu Ala Val Leu Ala Val Cys Gly Thr Leu Phe
20 25 30
Thr Ser Cys Tyr Glu Lys Ala Glu Val Asp Gln Ala Thr Lys Pro Ala
35 40 45
Glu Ala Lys Tyr Tyr Ile Ala Gly Thr Ile Thr Asp Ala Thr Thr Gly
50 55 60
Gln Glu Leu Thr Thr Ala Lys Val Thr Leu Gly Asp Lys Ser Val Thr
65 70 75 80
Ser Ser Phe Asn Glu Gln Val Asn Tyr Lys Ala Glu Gly Tyr Ala Leu
85 90 95
Val Val Ser Ala Asp Gly Tyr Tyr Pro Val Lys Arg Gln Val Tyr Leu
100 105 110
Asn Gln Val Ser Asp Gly Gln Thr Ser Val Ala Thr Val Asn Val Ala
115 120 125

Leu Val Ser Val Glu Ala Ala Val Ile Pro Pro Val Val Pro Pro Thr
 130 135 140
 Asp Pro Glu Thr Asp Ile Asn Glu Gly Glu Ala Thr Lys Val Ala Asp
 145 150 155 160
 Lys Ala Val Glu Val Ala Lys Pro Ser Glu Ser Thr Val Thr Asp Met
 165 170 175
 Leu Ala Gly Thr Thr Ala Thr Pro Glu Glu Lys Lys Ala Leu Asp Glu
 180 185 190
 Thr Leu Glu Met Ala Gly Gly Met Lys Val Gly Glu Thr Thr Pro Glu
 195 200 205
 Val Leu Ala Asp Gly Ser Ile Leu Ala Ile Thr Pro Val Lys Phe Thr
 210 215 220
 Asn Pro Ile Gln Asp Ala Pro Ala Met Val Pro Tyr Phe Tyr Asn Glu
 225 230 235 240
 Gly Cys Glu Leu Thr Gly Asp Val Lys Glu Val Ala Ala Pro Val Thr
 245 250 255
 Arg Ala Asp Gly Ala Val Ala Ala Asp Ile Gln Lys Ala Phe Leu Ser
 260 265 270
 Asn Ala Ala Lys Ala Leu Asn Met Asn Ala Gly Phe Val Gln Lys Ile
 275 280 285
 Gly Tyr Thr Arg Ile Ser Val Leu Asn Gly Tyr Ser Ile Leu Gly Tyr
 290 295 300
 Thr Ile Lys Gly Gln Leu Val Ser Lys Lys Leu Thr Phe Leu Ile Ser
 305 310 315 320
 Gly Lys Tyr Tyr Glu Gly Ile Val Ser Tyr Gln Lys Ser Val Met Ile
 325 330 335
 Tyr Pro Asn Tyr Tyr Ser His Asp Ser His Asp Ser His Asp Ser His
 340 345 350
 Gly Phe Asn Pro Asn Ala Gly Gly Gly Ser Asn Asp
 355 360

<210> 7574

<211> 522

<212> PRT

<213> B.fragilis

<400> 7574

Ile Phe Asn Phe Ile Glu Met Lys Met Lys Ser Lys Leu Phe Gly Asn
 1 5 10 15
 Gly Ala Lys Leu Ala Leu Thr Leu Leu Ala Met Cys Gly Met Phe Ala
 20 25 30
 Ser Cys Tyr Glu Lys Asp Glu Ile Asp Val Pro Lys Val Thr Asp Pro
 35 40 45
 Thr Ala Thr Thr Tyr Gln Val Ala Gly Ile Val Thr Asp Ala Glu Ser
 50 55 60
 Asn Ala Val Met Asp Gly Val Thr Val Thr Asn Val Thr Asn Ser Lys
 65 70 75 80
 Ser Met Thr Thr Ala Ala Asp Gly Lys Tyr Val Leu Glu Ala Lys Val
 85 90 95
 Gly Glu Thr Asn Val Val Thr Phe Ala Lys Ser Gly Tyr Lys Thr Val
 100 105 110
 Thr Ser Ser Val Phe Val Thr Lys Gln Glu Asn Gly Ser Ile Val Ala
 115 120 125
 Tyr Thr Ile Asp Ala Lys Met Glu Lys Gly Lys Glu Thr Lys Pro Thr
 130 135 140
 Lys Asp Val Glu Tyr Gln Ile Glu Gly Ser Val Phe Asp Ala Glu Ser
 145 150 155 160
 Gly Glu Pro Val Ala Ile Lys Thr Ala Thr Met Pro Gly Ile Leu Thr
 165 170 175

Ala Thr Ile Gln Asn Gly Asn Glu Phe Thr Met Ser Asn Val Gly Leu
 180 185 190
 Gly Gln His Thr Ile Tyr Ile Thr Ala Asp Gly Tyr Lys Pro Ala Thr
 195 200 205
 Ala Asp Val Val Ile Ser Glu Val Ala Gly Pro Glu Gly Glu Gly Ile
 210 215 220
 Phe Ile Ala Lys Thr Ser Val Thr Val Ala Met Gln Lys Lys Glu Val
 225 230 235 240
 Glu Val Ala Pro Lys Tyr Tyr Leu Ala Gly Asn Ile Tyr Asn Gln Asp
 245 250 255
 Gly Gly Met Val Thr Lys Ala Glu Val Thr Leu Asn Met Ser Gly Tyr
 260 265 270
 Glu Val Thr Thr Thr Ala Ser Asn Gly Phe Tyr Lys Phe Glu Ile Pro
 275 280 285
 Ala Asp Lys Val Lys Gly Leu Thr Lys Ala Thr Val Thr Ile Arg His
 290 295 300
 Asn Ser Tyr Lys Ile Tyr Val Tyr Thr Ala Phe Ile Ala Pro Val Asp
 305 310 315 320
 Asn Gly Gln Val Ser Asn Thr Thr Val Asn Val Thr Leu Ile Leu Lys
 325 330 335
 Pro Asp Thr Glu Lys Pro Asn Asp Asp Asp Asn Val Phe Ile Gly Gly
 340 345 350
 Asn Val Glu Ile Glu Val Pro Thr Glu Asn Ala Val Glu Ala Ala Pro
 355 360 365
 Glu Lys Ala Glu Gly Glu Lys Val Pro Ser Lys Ser Ala Val Glu Glu
 370 375 380
 Ser Ile Asn Lys Val Leu Glu Ala Ala Gly Ser Asp Ile Lys Ile Thr
 385 390 395 400
 Pro Ala Gln Ala Glu Gln Val Val Asn Thr Met Glu Lys Tyr Val Ala
 405 410 415
 Asn Gly Thr Leu Thr Glu Ile Asp Lys Val Ala Val Leu Pro Ile Glu
 420 425 430
 Lys Glu Thr Thr Phe Lys Leu Glu Ser Lys Val Ile Asp Thr Asn Asn
 435 440 445
 Asp Lys Glu Glu Thr Val Ile Asp Glu Ile Val Leu Arg Ala Asn Thr
 450 455 460
 Ile Ile Ile Phe Thr Ser Gly Val Ala Ser Thr Leu Asn Ile Ser Arg
 465 470 475 480
 Thr Asp Glu Val Lys Glu Gly Ala Phe Cys Arg Glu Tyr Asp Gly Thr
 485 490 495
 Pro Thr Gly Thr Ser Phe Arg Asn Ser Asp Gly Ser Glu Ile Tyr Ser
 500 505 510
 Cys Cys Cys Arg Ser Ser Arg Arg Asn Ser
 515 520

<210> 7575

<211> 63

<212> PRT

<213> B.fragilis

<400> 7575

Ser Asn Asn Tyr Ser Thr Met Asn Pro Asp Lys Ile Arg Asn Val Leu
 1 5 10 15
 Asn Ile Leu Phe Met Ile Leu Ala Leu Ala Ala Ile Ile Thr Tyr Phe
 20 25 30
 Val Ala Lys Asp Asp Phe Lys Val Phe Ile Tyr Val Cys Gly Ala Ala
 35 40 45
 Ile Phe Val Lys Leu Met Glu Phe Phe Ile Arg Phe Thr Asn Arg
 50 55 60

<210> 7576
 <211> 131
 <212> PRT
 <213> B.fragilis

<400> 7576

Leu Asn Glu Gln Asp Gln Asn Arg Ala Ile Met Phe Thr Asp Asp Lys
 1 5 10 15
 Ser Ile Glu Asn Ile Gln Gln Leu Phe Ala Glu Phe Lys Lys Phe Leu
 20 25 30
 Val Leu Gln Lys Glu Tyr Thr Lys Leu Glu Leu Thr Glu Lys Leu Thr
 35 40 45
 Ile Leu Leu Ser Thr Leu Ile Met Ile Leu Val Leu Thr Ile Leu Gly
 50 55 60
 Met Val Ala Leu Phe Tyr Leu Leu Phe Ala Leu Ala Tyr Ile Leu Glu
 65 70 75 80
 Pro Leu Val Gly Gly Leu Met Val Ser Phe Gly Ile Ile Ala Gly Ile
 85 90 95
 Asn Val Leu Leu Ile Ala Ile Ile Tyr Phe Phe Arg Arg Gln Leu Ile
 100 105 110
 Ile Ser Pro Met Val Asn Phe Leu Ala Asn Leu Phe Leu Asn Asp Ser
 115 120 125
 Asn Lys Lys
 130

<210> 7577
 <211> 103
 <212> PRT
 <213> B.fragilis

<400> 7577

Ile Ser Leu Gln Thr Tyr Phe Ser Thr Thr Pro Ile Lys Asn Glu Ala
 1 5 10 15
 Met Asn Asn Ser Thr Pro Thr Pro Lys Lys Ile Thr Leu Glu Asp Ile
 20 25 30
 Ala Gln Arg Lys Gln Glu Val Leu Gln Glu Ile Cys Asp Gln Lys Gln
 35 40 45
 Ala Met Ala Asp Thr Thr Arg Arg Ile Phe Ala Pro Leu Ala Pro Ala
 50 55 60
 Ala Ser Gly Gly Asn Ala Leu Met Arg Ser Phe Ser Thr Gly Met Ala
 65 70 75 80
 Ile Phe Asp Gly Val Met Leu Gly Met Lys Met Ile Arg Lys Val Arg
 85 90 95
 Gly Leu Phe Arg Lys Arg Tyr
 100

<210> 7578
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 7578

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45

Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 7579

<211> 305

<212> PRT

<213> B.fragilis

<400> 7579

Lys Lys Thr Lys His Tyr Lys Asn Met Lys His Ile Tyr Leu Leu Leu
 1 5 10 15
 Phe Met Leu Ile Pro Met Thr Gly Met Ala Gln Glu Gly Ile Ser Gln
 20 25 30
 Asp Thr Thr Leu Tyr Val Asn Gly Arg Lys Ile Leu Ile Lys Glu Asn
 35 40 45
 Glu Gly Lys Ile Lys Val Lys Leu Tyr Glu Gln Ser Ser His Gly Asp
 50 55 60
 Thr Ile Glu Asn Asp Gln Ile Phe Glu Gly Ile Tyr Thr Asp Gly Gln
 65 70 75 80
 Thr Thr Glu Arg Arg Thr Ala Phe Thr Val Pro Phe Val Lys Arg Lys
 85 90 95
 Asn His Tyr Arg Phe Asp Pro His Ile Ala Gly Phe Tyr Met Gly Tyr
 100 105 110
 Thr Arg Leu Ser Asp Gly Ile Asn Phe Asn Thr Pro Asp Gly Leu Asn
 115 120 125
 Ile Asn Ala Asn Lys Ser Trp Glu Ile Gly Phe Asn Leu Phe Gln Gly
 130 135 140
 Ser Leu Thr Leu Ser Arg Asp Arg Gln Trp Gly Ile Thr Thr Gly Leu
 145 150 155 160
 Gly Trp Gly Tyr Arg Ser Phe Arg Leu Gly Asn Asn Tyr Ala Phe Arg
 165 170 175
 Gln Ile Asp Gly Val Thr Gly Ile Val Pro Gly Val Pro Asp Glu Glu
 180 185 190
 Val Tyr Thr Lys Ser Arg Leu Arg Tyr Phe Tyr Phe Arg Ile Pro Val
 195 200 205
 Ala Leu Glu Trp Gln Lys Arg Phe Ser His Ser Asn Ala His Gly Pro
 210 215 220
 Leu Phe Phe Ser Ala Gly Leu Glu Ala Glu Ile Arg His Gly Ala Lys
 225 230 235 240
 Ser Lys Ala Lys Val Asn Gly His Lys Lys Asn Leu Asp Ser Gly Leu
 245 250 255
 Asn Val His Pro Val Gly Ile Asn Leu Leu Ala Gln Ala Gly Tyr Gly
 260 265 270
 Asp Ile Gly Val Tyr Leu Arg Tyr Ser Thr Tyr Ser Leu Phe Glu His
 275 280 285
 Lys Lys Gly Pro Glu Leu Tyr Pro Tyr Ser Phe Gly Leu Cys Trp Tyr
 290 295 300
 Trp
 305

<210> 7580

<211> 460

<212> PRT

<213> B.fragilis

<400> 7580

Lys Ile Asn Lys Glu Ile Thr Asn Leu Ile Phe Ile Thr Asn Asn Phe
 1 5 10 15
 Leu Lys Thr Met Thr Gln Gln Lys Lys Asn Tyr Val Leu Pro Ile Ala
 20 25 30
 Met Met Phe Ala Leu Phe Ala Met Ile Ser Phe Val Thr Gly Leu Thr
 35 40 45
 Asn Pro Leu Gly Leu Ile Val Lys Glu Gln Phe Gln Ala Ala Asn Trp
 50 55 60
 Met Thr Gln Leu Gly Asn Ala Ala Asn Phe Ile Ala Tyr Ala Phe Met
 65 70 75 80
 Gly Leu Pro Ala Gly Met Met Leu Lys Arg Ile Gly Tyr Lys Lys Thr
 85 90 95
 Ala Leu Thr Ala Val Ala Val Gly Phe Ile Gly Val Gly Ile Gln Val
 100 105 110
 Leu Ser Gly Gln Met Asp Tyr Gln Pro Gly Glu Leu Thr Val Phe Trp
 115 120 125
 Ile Tyr Leu Thr Gly Ala Phe Val Ser Gly Phe Ser Met Cys Met Leu
 130 135 140
 Asn Ala Val Val Asn Pro Leu Leu Asn Thr Leu Ala Gly Gly Gly Lys
 145 150 155 160
 Lys Gly Asn Gln Leu Ile Gln Phe Gly Gly Ser Leu Asn Ser Ile Ser
 165 170 175
 Ala Thr Ile Val Pro Val Leu Gly Gly Tyr Leu Ile Gly Thr Ile Ser
 180 185 190
 Gln Asp Thr Arg Ile Ser Asp Ala Asn Pro Ala Leu Phe Ile Ala Met
 195 200 205
 Gly Ile Phe Ala Val Val Phe Ile Val Leu Ala Ile Met Asp Ile Pro
 210 215 220
 Glu Pro His Lys Glu Ser Ala Ser Asp His Lys Val Lys Asp Thr His
 225 230 235 240
 Ser Pro Leu Ser Phe Arg His Phe Val Leu Gly Thr Val Ala Ile Phe
 245 250 255
 Val Tyr Val Gly Val Glu Val Gly Ile Pro Asn Phe Ile Asn Leu Phe
 260 265 270
 Leu Thr Thr Ser Pro Asp Ala Ala Gly Ala Lys Gly Phe Gly Met Asp
 275 280 285
 Thr Ala Met Ala Gly Ser Ile Val Gly Thr Tyr Trp Phe Leu Met Met
 290 295 300
 Ile Gly Arg Leu Cys Gly Gly Ala Leu Gly Ala Lys Phe Ser Ser Lys
 305 310 315 320
 Thr Gln Leu Thr Val Val Ser Ser Leu Ala Leu Ile Phe Leu Leu Ile
 325 330 335
 Gly Met Phe Ala Pro Ser Ala Thr Thr Val Ala Met Pro Val Phe Lys
 340 345 350
 Gly Gly Ala Ser Ile Gly Phe Gly Met Glu Thr Val Pro Val Gly Ile
 355 360 365
 Met Phe Phe Ala Leu Cys Gly Leu Cys Thr Ser Ile Met Trp Gly Gly
 370 375 380
 Ile Phe Asn Leu Ala Val Glu Gly Leu Gly Lys Tyr Thr Ala Met Ala
 385 390 395 400
 Ser Gly Ile Phe Met Val Met Val Cys Gly Gly Gly Ile Leu Pro Leu
 405 410 415
 Ile Gln Gly Ala Val Ala Asp Val Thr Ser Ser Tyr Ile Ala Ser Tyr
 420 425 430
 Trp Val Ile Phe Ala Ala Val Ala Tyr Met Leu Tyr Tyr Ala Leu Val
 435 440 445
 Gly Cys Lys Asn Val Asn Lys Asp Ile Pro Val Glu
 450 455 460

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<210> 7581
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 7581

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Pro Asp Ser Asn Ile Ile Pro Cys Thr Thr Arg Leu Val Asp Val Pro
1          5          10          15
Ile Lys Val Gln Ile Pro Pro Asn Ile Val Thr Tyr Glu Arg Gly Ile
20          25          30
Arg Asn Leu Val Ala Gly Lys Trp Thr Val Arg Ala His Arg Leu Ile
35          40          45
Ile Gly Ala Lys Met Thr Thr Thr Gly Val Leu Phe Arg Lys Ala Glu
50          55          60
Ile Lys Ala Thr Ala Gly Asn Lys Arg Asn Cys Ala Arg Lys Thr Val
65          70          75          80
Val Arg Phe

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<210> 7582
 <211> 279
 <212> PRT
 <213> B.fragilis

<400> 7582

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Ser Ala Cys Asn Ala Glu Ser Ile Thr Met Leu Phe Val Tyr Ala Lys
1          5          10          15
Tyr Ile Lys Ile Met Ser Asn Glu Asn Lys Thr Ile His Asp Phe Glu
20          25          30
Leu Asn Leu Ile Cys Asp Phe Phe Ser Asn Met Glu Arg Gln Gly Pro
35          40          45
Gly Ser Pro Glu Val Thr Leu Lys Ala Leu Ser Phe Ile Asp Asn Leu
50          55          60
Thr Glu Lys Ser Leu Ile Ala Asp Ile Gly Cys Gly Thr Gly Gly Gln
65          70          75          80
Thr Met Val Leu Ala Gly His Val Thr Gly Gln Val Thr Gly Leu Asp
85          90          95
Phe Leu Ser Gly Phe Ile Asp Ile Phe Asn Arg Asn Ala Arg Gln Ser
100          105          110
Gly Leu Gln Asn Arg Val Thr Gly Ile Val Gly Ser Met Asp Asp Leu
115          120          125
Pro Phe Arg Asn Glu Glu Leu Asp Leu Ile Trp Ser Glu Gly Ala Ile
130          135          140
Tyr Asn Ile Gly Phe Glu Arg Gly Leu Asn Glu Trp Arg Lys Tyr Leu
145          150          155          160
Lys Lys Gly Gly Tyr Leu Ala Val Ser Glu Cys Ser Trp Phe Thr Asp
165          170          175
Glu Arg Pro Ala Glu Ile Asn Asp Phe Trp Met Asp Ala Tyr Pro Glu
180          185          190
Ile Asp Thr Ile Pro Asn Gln Val Ala Lys Ile His Lys Ala Gly Tyr
195          200          205
Leu Pro Val Ala Thr Phe Ile Leu Pro Glu Asn Cys Trp Thr Asp His
210          215          220
Tyr Phe Thr Pro Lys Val Ala Ala Gln Lys Ile Phe Leu Thr Lys Tyr
225          230          235          240
Ala Gly Asn Lys Ile Ala Glu Glu Phe Ser Met Leu Gln Ser Ile Glu
245          250          255
Glu Glu Leu Tyr His Lys Tyr Lys Glu Tyr Tyr Gly Tyr Thr Phe Phe

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260
Ile Ala Lys Lys Ile Gly Leu
275

265

270

<210> 7583
<211> 396
<212> PRT
<213> B.fragilis

<400> 7583

Thr Phe Leu Asn Arg Arg Thr Asp Leu Gln Arg Ile Ile Trp Glu Asn
1 5 10 15
Glu Arg Ile Ser Leu Tyr Leu Gln Glu Ile Leu Ile Ile Pro Asp Met
20 25 30
Ile Asn Thr Phe Pro Thr Glu Gly Asn Leu Ser Gly Leu Ser Arg Lys
35 40 45
Asp Phe Gln Lys Asp Ile Asn Asp Lys Lys Thr Asp Leu Phe Ile Leu
50 55 60
Lys Asn Lys Lys Gly Met Glu Val Ala Val Thr Asn Tyr Gly Cys Ala
65 70 75 80
Ile Leu Ser Ile Met Val Pro Asp Lys Asp Gly Lys Tyr Ala Asn Val
85 90 95
Val Leu Ser Tyr Gly Thr Leu Asp Ala Leu Met His Gly Pro Glu Pro
100 105 110
Phe Leu Ser Thr Thr Ile Gly Arg Tyr Gly Asn Arg Ile Ala Lys Gly
115 120 125
Lys Phe Thr Leu Tyr Gly Glu Glu His Ser Leu Thr Ile Asn Asn Gly
130 135 140
Pro Asn Ser Leu His Gly Gly Pro Thr Gly Phe His Ala Arg Val Trp
145 150 155 160
Asp Ala Glu Gln Leu Glu Glu Gly Val Ile Arg Phe Asn Tyr Thr Ser
165 170 175
Ala Asp Gly Glu Glu Gly Phe Pro Gly Asn Leu Glu Val Glu Met Thr
180 185 190
Tyr Arg Leu Glu Glu Glu Glu Asn Ala Ile Val Ile Glu Tyr Arg Ala
195 200 205
Thr Thr Asp Lys Ala Thr Val Val Asn Leu Thr Asn His Gly Phe Phe
210 215 220
Asn Leu Ala Gly Thr Ala Asn Pro Thr Pro Thr Val Glu Asn Asn Ile
225 230 235 240
Val Thr Ile Asn Ala Asp Phe Tyr Thr Pro Ile Asp Glu Val Ser Ile
245 250 255
Pro Thr Gly Glu Ile Ala Lys Val Glu Gly Thr Pro Met Asp Phe Arg
260 265 270
Thr Pro His Thr Val Gly Glu Arg Ile Asn Asp Lys Phe Gln Gln Leu
275 280 285
Ile Tyr Gly Ala Gly Tyr Asp His Cys Tyr Val Leu Asn Lys Ala Glu
290 295 300
Thr Gly Ser Leu Asp Leu Ala Ala Thr Cys Lys Glu Pro Asn Ser Gly
305 310 315 320
Arg Thr Met Glu Val Tyr Thr Thr Glu Ala Gly Val Gln Leu Tyr Thr
325 330 335
Gly Asn Trp Leu Gly Gly Phe Glu Gly Thr Asn Gly Ala Thr Phe Pro
340 345 350
Ala Arg Ser Ala Ile Cys Phe Glu Ala Gln Cys Phe Pro Asp Thr Pro
355 360 365
Asn Lys Ala His Phe Pro Ser Ala Thr Leu Leu Pro Gly Asp Glu Tyr
370 375 380
Gln Gln Val Thr Ile Tyr Lys Phe Gly Val Glu Lys

385

390

395

<210> 7584
 <211> 173
 <212> PRT
 <213> B.fragilis

<400> 7584

Met	Glu	Leu	Lys	Gln	Phe	Lys	Ile	Ala	Val	Leu	Pro	Leu	Arg	Asp	Lys
1				5					10					15	
Leu	Leu	Ser	Tyr	Ala	Arg	Lys	Leu	Thr	Asp	Asp	His	Ser	Asp	Ala	Glu
			20					25					30		
Asp	Ala	Val	Gln	Glu	Val	Met	Leu	Lys	Leu	Trp	Lys	Leu	Arg	Pro	Lys
		35					40					45			
Leu	Asp	Glu	Tyr	His	Ser	Ile	Glu	Ala	Leu	Ala	Met	Thr	Met	Thr	His
	50					55					60				
His	Thr	Cys	Met	Asp	Ile	Leu	Arg	Gly	Lys	His	Pro	Asp	Asn	Leu	Ser
65					70					75				80	
Leu	Asp	Ser	Val	Gln	Ala	Ala	Ser	Pro	Val	Ala	Thr	Pro	Glu	Arg	Leu
			85						90					95	
Leu	Glu	Glu	Lys	Asp	Glu	Phe	Ser	Leu	Met	Arg	His	Ile	Ile	Ser	Thr
			100					105					110		
Leu	Pro	Pro	Leu	Gln	Gln	Thr	Ile	Leu	Arg	Met	Lys	Asp	Val	Glu	Glu
			115				120					125			
Tyr	Glu	Thr	Glu	Glu	Ile	Ala	Glu	Ile	Thr	Gly	Cys	Ser	Ser	Glu	Ala
	130					135					140				
Ile	Arg	Ser	Asn	Leu	Ser	Arg	Ala	Arg	Lys	Lys	Val	Arg	Asp	Ile	Tyr
145					150					155					160
Leu	Gln	Thr	Ile	Gln	Gln	Arg	Lys	Arg	Arg	Asn	Glu	Ala			
				165					170						

<210> 7585
 <211> 209
 <212> PRT
 <213> B.fragilis

<400> 7585

Arg	Leu	Ile	Asn	Leu	Pro	Leu	Ile	Val	Tyr	Trp	Met	Ile	Val	Ala	Asp
1				5					10					15	
Phe	Arg	Ile	Glu	Lys	Leu	Leu	Lys	Cys	His	Leu	Ile	Asn	Asn	Asn	Ile
			20					25					30		
Met	Lys	Lys	Leu	Leu	Leu	Leu	Ser	Val	Leu	Ser	Ile	Phe	Met	Ile	Ala
		35					40					45			
Cys	His	Gln	Pro	Asp	Thr	Pro	Pro	Tyr	Ser	Tyr	Ser	Met	Asn	Ile	Asp
	50					55					60				
Met	Gln	Ile	Ile	Ser	Ser	Leu	Glu	Thr	Thr	Tyr	Pro	Leu	Asp	Asn	Leu
65					70					75					80
Glu	Thr	Val	Ile	Ile	Asn	Ser	Arg	Leu	Glu	Leu	Ala	Ser	Ser	Ser	Tyr
			85						90					95	
Arg	Ile	Lys	Thr	Leu	Ile	Ser	Ser	Asn	Asp	Leu	Gln	Glu	Ser	Trp	Leu
			100					105					110		
Glu	Arg	Pro	Ile	Val	Met	Leu	Gly	Arg	Glu	Gly	His	Arg	Tyr	Leu	Ser
		115					120					125			
Leu	Pro	Ile	Thr	Phe	Asn	Glu	Lys	Asp	Arg	Tyr	Asn	Val	Lys	Ile	
	130					135					140				
Glu	Phe	Tyr	Cys	Pro	Glu	Ile	Phe	Lys	Asp	Asp	Lys	Tyr	His	Thr	Ile
145					150					155					160
Asn	Ile	Val	Tyr	Ser	Ile	Val	Lys	Gly	Lys	Tyr	Leu	Tyr	Asn	Leu	Glu
				165					170					175	

Ser Phe Thr Leu Asp Ser Tyr Ala Gly Glu Ile Glu Asn Gln Gly Glu
 180 185 190
 Asn Asn Ala Pro Ile Ile Val Phe Ser Ile Asn Thr Ala Glu Lys Lys
 195 200 205
 Glu

<210> 7586
 <211> 480
 <212> PRT
 <213> B.fragilis

<400> 7586

Tyr Lys Ile Asn Arg Glu Ile Pro Ile Ile Val Trp Gly Lys Ser Ile
 1 5 10 15
 Arg Gln Arg Glu Tyr Leu Ala Tyr Leu Cys Asn Val Asn Lys Lys Ile
 20 25 30
 Lys Lys Pro Ile Asn His Gly Asn Met Lys Lys Ile Val Leu Leu Ser
 35 40 45
 Leu Phe Ala Leu Cys Leu Pro Leu Leu Val Met Ala Gln Ser Asn Asn
 50 55 60
 Asp Asp Leu Tyr Phe Val Pro Ser Lys Glu Lys Lys Gln Glu Ala Lys
 65 70 75 80
 Lys Thr Pro Val Lys Lys Glu Pro Glu Lys Lys Val Val Thr Thr Asn
 85 90 95
 Ile Tyr Thr Ser Pro Gly Thr Thr Val Val Val Gln Asp Arg Lys Gly
 100 105 110
 Asn Lys Arg Asp Met Arg Asp Val Asp Glu Tyr Asn Arg Arg Tyr Asp
 115 120 125
 Val Lys Asp Asn Glu Phe Ala Met Glu Asp Asp Thr Leu Tyr Val Lys
 130 135 140
 Glu Lys Ala Val Ser Asp Pro Asp Gly Glu Trp Val Asn Gly Phe Asn
 145 150 155 160
 Gly Ser Gln Asp Asp Tyr Glu Tyr Ala Glu Arg Ile Ile Arg Phe Arg
 165 170 175
 Asn Pro Arg Phe Ala Val Ser Ile Ser Ser Pro Leu Tyr Trp Asp Ile
 180 185 190
 Val Tyr Gly Thr Asn Ser Trp Asp Trp Asn Val Tyr Thr Asp Gly Phe
 195 200 205
 Tyr Ala Tyr Ala Phe Pro Thr Phe Thr Asn Arg Leu Trp Trp Asp Trp
 210 215 220
 Arg Tyr Asn Ser Tyr Gly Ser Gly Trp Gly Trp Gly Trp Gly Trp Ser
 225 230 235 240
 Ser Pro Tyr Tyr Ala Trp Gly Gly Tyr Tyr Pro Gly Tyr Trp Gly Gly
 245 250 255
 Tyr Trp Gly Gly Tyr Trp Gly Gly Trp Tyr Gly Gly Gly Tyr Trp Gly
 260 265 270
 His His His His Tyr His Pro Gly Trp Gly Gly Gly Gly His Tyr Trp
 275 280 285
 Ala Ser His Asn Thr Tyr Thr Asn Arg Arg Ser Tyr Gly Pro Ser Arg
 290 295 300
 Val Ser Thr Ser Ser Arg Val Asn Ala Ser Ser Ile Arg Arg Thr Asp
 305 310 315 320
 Ser Tyr Thr Arg Ser Gly Asn Asn Ile Ser Pro Ser Arg Gly Gly Asp
 325 330 335
 Ser Arg Met Asn Tyr Gly Ser Arg Arg Val Ile Ser Val Arg Asp Thr
 340 345 350
 Glu Arg Pro Asp Ala Thr Thr Arg Thr Asp Ala Ser Ser Ser Arg Arg
 355 360 365

Ser Thr Tyr Thr Arg Pro Ser Ser Thr Arg Ser Ser Ser Ser Tyr Asn
 370 375 380
 Ser Asn Val His Pro Asn Arg Ser Thr Asn Ser Gly Thr Tyr Ser Arg
 385 390 395 400
 Ser Thr Ser Arg Ser Ser Ser Thr Tyr Thr Arg Gly Ser Ser Thr Thr
 405 410 415
 Thr Pro Ser Arg Ser Tyr Ser Asn Glu Gly Thr Arg Arg Ser Tyr Gly
 420 425 430
 Ser Ser Ser Ser Ser Arg Ser Tyr Ser Ser Gly Ser Ser Thr Arg Ser
 435 440 445
 Ser Ser Ser Tyr Ser Ser Gly Ser Arg Ser Ser Gly Ser Ser Ser Arg
 450 455 460
 Ser Thr Ser Gly Gly Gly Ser Tyr Ser Arg Ser Ser Gly Gly Arg Arg
 465 470 475 480

<210> 7587

<211> 66

<212> PRT

<213> B.fragilis

<400> 7587

Asn Tyr Ser Lys Pro Ser Ile Ile Thr Asn His Asn Pro Tyr His Asn
 1 5 10 15
 Glu Glu Lys Tyr Tyr Ser Val Ile His Gln Phe Thr Phe Ile Pro Ala
 20 25 30
 Met His Lys Gly Thr Ser Thr Arg Ile Leu His Cys Arg Ile Phe Pro
 35 40 45
 Ala Gly Arg Leu Arg Thr Arg Arg Leu Phe His Glu Ser Cys Met Ala
 50 55 60
 Phe Leu
 65

<210> 7588

<211> 76

<212> PRT

<213> B.fragilis

<400> 7588

Ile Met Ala Lys Ile Lys Gly Ala Ile Val Val Asp Thr Glu Arg Cys
 1 5 10 15
 Lys Gly Cys Asn Leu Cys Val Val Ala Cys Pro Leu Asn Val Ile Ser
 20 25 30
 Leu Ala Lys Glu Val Asn Val Lys Gly Tyr Asn Tyr Ala Gln Gln Ile
 35 40 45
 Leu Glu Asp Thr Cys Asn Gly Cys Ser Ser Cys Ala Thr Val Cys Pro
 50 55 60
 Asp Gly Cys Ile Ser Val Tyr Lys Val Lys Val Glu
 65 70 75

<210> 7589

<211> 149

<212> PRT

<213> B.fragilis

<400> 7589

His Ile Lys Lys Asp Met Lys Lys Ile Gly Ile Cys Cys Asp His Ala
 1 5 10 15
 Gly Phe Glu Leu Lys Glu Tyr Val Arg Gly Trp Leu Glu Ala Lys Gly
 20 25 30

Trp Glu Tyr Lys Asp Phe Gly Thr Tyr Ser Thr Asp Ser Cys Asp Tyr
 35 40 45
 Pro Asp Phe Ala His Pro Leu Ala Leu Ala Val Glu Ala Ser Glu Cys
 50 55 60
 Tyr Pro Gly Ile Ala Ile Cys Gly Ser Gly Asn Gly Ile Ser Met Thr
 65 70 75 80
 Leu Asn Lys His Gln Gly Ile Arg Ala Ala Leu Cys Trp Thr Ala Glu
 85 90 95
 Ile Ala His Met Ala Arg Leu His Asn Asp Ala Asn Val Leu Val Met
 100 105 110
 Pro Gly Arg Tyr Ile Ser Thr Glu Glu Ala Asp Met Ile Met Thr Glu
 115 120 125
 Phe Phe Ser Thr Glu Phe Glu Gly Gly Arg His Gln Lys Arg Ile Asp
 130 135 140
 Lys Ile Pro Val Lys
 145

<210> 7590
 <211> 166
 <212> PRT
 <213> B.fragilis

<400> 7590

Ile Met Lys Lys Leu Val Val Leu Gly Met Gly Val Cys Val Ala Leu
 1 5 10 15
 Ala Phe Ala Ser Cys Lys Ser Ser Glu Ser Ala Tyr Lys Lys Ala Tyr
 20 25 30
 Glu Lys Ala Lys Gln Gln Glu Leu Ala Glu Pro Gln Val Glu Ala Pro
 35 40 45
 Val Glu Val Thr Pro Val Val Ala Ala Pro Val Glu Thr Lys Lys Ala
 50 55 60
 Val Asp Asn Ala Ala Gly Val Arg Gln Glu Lys Val Thr Val Val Ser
 65 70 75 80
 Gly Ala Asp Gly Leu Lys Asp Tyr Ser Val Val Cys Gly Ser Phe Gly
 85 90 95
 Leu Lys Ala Asn Ala Glu Gly Leu Lys Asp Phe Leu Asp Lys Glu Gly
 100 105 110
 Tyr Asn Ala Thr Ile Ala Phe Asn Ala Glu Thr Ala Met Tyr Arg Val
 115 120 125
 Ile Val Asn Thr Phe Ala Asp Arg Ala Ser Ala Ala Gln Ala Arg Asp
 130 135 140
 Ala Phe Lys Ala Lys Tyr Pro Ser Arg Lys Asp Phe Gln Gly Ala Trp
 145 150 155 160
 Leu Leu Tyr Arg Ile Tyr
 165

<210> 7591
 <211> 528
 <212> PRT
 <213> B.fragilis

<400> 7591

Asp Met Lys Lys Ile Ile Ile Val Ser Ala Leu Val Leu Leu Trp Thr
 1 5 10 15
 Ala Gly Ala Asn Ala Gln Thr Ala Tyr Asp Ala Ala Lys Leu Val Ser
 20 25 30
 Lys Asp Leu Asn Gly Thr Ala Arg Phe Val Gly Met Gly Gly Ala Met
 35 40 45
 Gly Ala Leu Gly Gly Asp Ile Ser Thr Met Gly Thr Asn Pro Ala Gly

[illegible]

<210> 7592
 <211> 375
 <212> PRT
 <213> B.fragilis

<400> 7592

Asn	Asn	Met	Lys	Ser	Lys	Ile	Ala	Ile	Leu	Ser	Leu	Leu	Leu	Thr	Gly
1				5					10					15	
Ala	Ala	Val	Ser	Ala	Ser	Ala	Gln	Thr	Lys	Glu	His	Tyr	Tyr	Ser	Glu
			20					25					30		
Lys	Ala	Lys	Asp	Asn	Ile	Phe	Ile	Ser	Val	Gly	Val	Gly	Ala	Gln	Gly
		35				40						45			
Cys	Val	Asn	Pro	Asp	Asn	Phe	Asp	Tyr	Gly	Phe	Gly	His	Ala	Ile	Thr
	50					55					60				
Pro	Leu	Ile	His	Ala	Ser	Val	Gly	Lys	Leu	Phe	Asn	Pro	Ile	Trp	Gly
65					70					75				80	
Ile	Arg	Gly	Gln	Val	Ala	Gly	Cys	Trp	Ser	Thr	Leu	Tyr	Ser	Glu	Tyr
				85					90					95	
Gly	Met	Pro	Glu	Gly	Glu	Tyr	Lys	Lys	Met	Lys	Asn	Lys	Lys	Tyr	Phe
			100					105					110		
Thr	Leu	Arg	Ala	Asp	Gly	Leu	Phe	Asn	Leu	Ser	Asn	Ala	Ile	Gly	Gly
		115					120					125			
Tyr	Asn	Pro	Asp	Arg	Leu	Phe	Thr	Val	Ser	Val	Phe	Ala	Gly	Pro	Gly
	130					135					140				
Leu	Thr	Phe	Ala	Lys	Ala	Tyr	Gly	Asn	Gln	Asp	Lys	Leu	Asn	Ala	Leu
145					150					155					160
Ile	Asn	Gly	Ser	Val	Gly	Leu	Met	Gly	Gln	Phe	Asn	Ile	Asn	Lys	Tyr
				165					170					175	
Leu	Asp	Ile	Asn	Val	Glu	Ala	Arg	Gly	Glu	Val	Ser	Pro	Ser	Val	Phe
			180					185					190		
Gly	His	Tyr	Ser	Ser	Ala	Arg	Thr	Asp	Gly	Ala	Val	Ser	Leu	Thr	Ala
		195					200					205			
Gly	Val	Thr	Tyr	Thr	Phe	Gly	Gly	Lys	Arg	Phe	Val	Ser	Cys	Gly	Ala
	210					215					220				
Gln	Val	Asp	Gln	Asn	Ala	Ile	Asn	Glu	Glu	Leu	Asn	Arg	Tyr	Arg	Ser
225					230					235					240
Glu	Leu	Ser	Lys	Ala	Gln	Ser	Asp	Leu	Ala	Asp	Ala	Lys	Asn	Ala	Leu
				245					250					255	
Ala	Asn	Val	Lys	Pro	Val	Thr	Lys	Glu	Val	Val	Lys	Glu	Ile	Glu	Val
			260					265					270		
Ala	Gly	Pro	Arg	Ala	Val	Phe	Phe	Gln	Ile	Gly	Lys	Ser	Lys	Ile	Asp
		275					280					285			
Asp	Tyr	Gly	Met	Val	Asn	Ile	Gln	Leu	Ala	Ala	Lys	Ile	Leu	Lys	Ala
	290					295					300				
Asn	Pro	Asp	Lys	Lys	Tyr	Lys	Ile	Ala	Gly	Tyr	Ala	Asp	Lys	Ala	Thr
305					310					315					320
Gly	Ser	Ala	Lys	Trp	Asn	Gln	Lys	Leu	Ser	Glu	Ala	Arg	Ala	Gln	Ala
				325					330					335	
Val	Tyr	Asp	Ala	Leu	Ile	Lys	Glu	Gly	Val	Ser	Lys	Asp	Gln	Leu	Glu
		340						345					350		
Leu	Val	Gly	Phe	Gly	Gly	Thr	Ala	Asn	Met	Phe	Gly	Lys	Asn	Phe	Leu
	355						360					365			
Asn	Arg	Val	Val	Ile	Leu	Glu									
	370					375									

<210> 7593
 <211> 258
 <212> PRT

<213> B.fragilis

<400> 7593

Glu Glu Met Lys Gly Lys Ile Val Phe Ile Thr Gly Ala Ser Ser Gly
 1 5 10 15
 Ile Gly Glu Gly Cys Ala Arg Lys Phe Ala Ser Gln Gly Ser Asp Leu
 20 25 30
 Ile Leu Asn Ala Arg Asn Val Ala Lys Leu Glu Glu Leu Lys Val Glu
 35 40 45
 Leu Glu Ala Lys Tyr Gly Val Arg Ile Cys Leu Leu Pro Phe Asp Val
 50 55 60
 Arg Asp Arg Asn Ala Ala Thr Met Ala Leu Ala Ser Leu Pro Glu Glu
 65 70 75 80
 Trp Lys Arg Ile Asp Val Leu Val Asn Asn Ala Gly Leu Val Ile Gly
 85 90 95
 Val Asp Lys Glu Phe Glu Gly Asn Leu Asp Glu Trp Asp Ile Val Ile
 100 105 110
 Asp Thr Asn Ile Lys Ala Leu Leu Ala Met Thr Arg Ile Val Val Pro
 115 120 125
 Gly Met Val Glu Arg Gly His Gly His Ile Ile Asn Ile Gly Ser Ile
 130 135 140
 Ala Gly Asp Ala Ala Tyr Pro Gly Gly Ser Val Tyr Cys Ala Thr Lys
 145 150 155 160
 Ala Ala Val Lys Ala Leu Ser Asp Gly Leu Arg Ile Asp Leu Val Asp
 165 170 175
 Thr Pro Leu Arg Val Thr Asn Ile Lys Pro Gly Met Val Glu Thr Asn
 180 185 190
 Phe Thr Val Val Arg Tyr Arg Gly Asp Lys Asp Ala Ala Asp Ala Phe
 195 200 205
 Tyr Lys Gly Ile Arg Pro Leu Thr Gly Asp Asp Ile Ala Glu Thr Val
 210 215 220
 Tyr Tyr Ala Ala Ser Ala Pro Glu His Ile Gln Ile Ala Glu Val Leu
 225 230 235 240
 Val Met Pro Thr Tyr Gln Ala Thr Gly Thr Ile Ser Tyr Lys Lys Lys
 245 250 255
 Asp Cys

<210> 7594

<211> 293

<212> PRT

<213> B.fragilis

<400> 7594

Lys Asn Ser Lys Pro Ser Pro Ser Ile Leu Ser Ala Lys Trp Arg Arg
 1 5 10 15
 Glu Leu Arg Ile Arg Ser Cys Cys Ile Ala Ser Gly Arg Ile Leu Ser
 20 25 30
 Leu Trp Tyr Gly Leu Ala Glu Lys Ser Phe Tyr Pro Gly Lys Val Pro
 35 40 45
 Val Pro Leu Met His Ile Asp Ser Lys Trp Lys Phe Lys Glu Met Ile
 50 55 60
 Gln Phe Arg Asp Glu Tyr Ala Lys Lys Tyr Gly Trp Asn Leu Ile Val
 65 70 75 80
 Glu Ser Asn Met Glu Ala Phe His Ala Gly Val Gly Pro Phe Thr His
 85 90 95
 Gly Ser Lys Val His Thr Asp Leu Met Lys Thr Gln Ala Leu Leu Arg
 100 105 110
 Ala Leu Asp Lys Tyr Lys Phe Asp Ala Ala Phe Gly Gly Ala Arg Arg

115	120	125
Asp Glu Glu Lys Ser Arg	Ala Lys Glu Arg Ile Phe	Ser Phe Arg Asp
130	135	140
Lys Phe His Gln Trp Asp	Pro Lys Asn Gln Arg Pro	Glu Leu Trp Asp
145	150	155
Ile Tyr Asn Ala Arg Val	His Lys Gly Glu Ser Ile	Arg Val Phe Pro
165	170	175
Leu Ser Asn Trp Thr Glu	Leu Asp Ile Trp Gln Tyr	Ile Arg Leu Glu
180	185	190
Asn Ile Pro Ile Val Pro	Leu Tyr Ala Lys Glu Arg	Pro Val Val
195	200	205
Gln Met Asp Gly Asn Leu	Ile Met Ala Asp Asp	Glu Arg Leu Pro Glu
210	215	220
Lys Tyr Arg Asp Gln Ile	Glu Met Lys Met Val Arg	Phe Arg Thr Leu
225	230	235
Gly Cys Trp Pro Leu Thr	Gly Ala Val Glu Ser Glu	Ala Asp Thr Ile
245	250	255
Glu Lys Ile Val Glu Glu	Met Met Thr Thr Thr	Lys Ser Glu Arg Thr
260	265	270
Thr Arg Val Ile Asp Phe	Asp Gln Glu Gly Ser Met	Glu Gln Lys Lys
275	280	285
Arg Glu Gly Tyr Phe		
290		

<210> 7595
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 7595
 Asn Ile Gly Lys Asp Leu Ile Met Asn Asp Glu Arg Ser Thr Ile Asn
 1 5 10 15
 Asp Arg Asp Arg Leu Thr Ser His Tyr Ile Pro Pro Val Arg Thr Leu
 20 25 30
 Leu Ile Val Asp Arg Ser Ser Phe Phe Tyr Leu Phe His Val Thr Phe
 35 40 45
 Ser Phe Leu Leu Arg Leu Ala Tyr Val Asn Gly Thr Lys Thr Ile Gln
 50 55 60
 Asn Ser Arg Ser Ser Thr Pro Arg Gln Thr Ala
 65 70 75

<210> 7596
 <211> 79
 <212> PRT
 <213> B.fragilis

<400> 7596
 Asn Ile Asp Glu Glu Ile Ile Ile Lys Met Lys Glu Glu Tyr Lys Leu
 1 5 10 15
 Ser His Leu Lys Glu Leu Glu Ala Glu Ser Ile His Ile Ile Arg Glu
 20 25 30
 Val Ala Ala Gly Val Glu Asn Pro Val Met Leu Tyr Ser Ile Gly Lys
 35 40 45
 Asp Ser Phe Val Met Val Arg Pro Cys Arg Lys Lys Leu Leu Ser Gly
 50 55 60
 Gln Ser Thr Gly Ser Phe Asp Ala Tyr Arg Phe Lys Val Glu Ile
 65 70 75

<210> 7597

<211> 84
 <212> PRT
 <213> B.fragilis

<400> 7597

Ile	Lys	Phe	Glu	Ile	Val	Asn	Cys	Phe	Ile	Phe	Val	Thr	His	Tyr	Leu
1				5					10					15	
Asn	Ile	Phe	Arg	Ile	His	Glu	Lys	His	Ser	Asn	Thr	Phe	Ser	Ile	Ala
			20					25					30		
Cys	Arg	Leu	Asn	Leu	Asn	Tyr	Asn	Asn	Lys	Glu	Leu	Leu	Pro	Lys	Arg
		35					40					45			
Val	Phe	Arg	Glu	Lys	Thr	Lys	Gly	Gln	Ser	Val	Ala	Lys	Lys	Gln	Ile
	50					55					60				
Val	Tyr	Lys	Thr	Lys	Ser	Asp	Leu	Arg	Val	Phe	Val	Met	Pro	Gln	Arg
65					70					75					80
Tyr	Ile	Ile	Phe												

<210> 7598
 <211> 491
 <212> PRT
 <213> B.fragilis

<400> 7598

His	Gly	Thr	Glu	Glu	Thr	Arg	Arg	Ile	Phe	Leu	Asn	Ile	Thr	Thr	Met
1				5					10					15	
Ala	Asp	Lys	Leu	Asp	Ile	Lys	Ala	Phe	Leu	Asp	Lys	Asp	Glu	Gln	Lys
			20					25					30		
Asp	Leu	Leu	Arg	Leu	Leu	Thr	Ala	Gly	Ser	Val	Asp	Asp	Gly	Lys	Ser
		35					40					45			
Thr	Leu	Ile	Gly	Arg	Leu	Leu	Phe	Asp	Ser	Lys	Lys	Leu	Tyr	Glu	Asp
	50					55					60				
Gln	Leu	Asp	Ala	Leu	Glu	Arg	Asp	Ser	Lys	Arg	Leu	Gly	Asn	Ala	Gly
65					70				75						80
Glu	His	Ile	Asp	Tyr	Ala	Leu	Leu	Leu	Asp	Gly	Leu	Lys	Ala	Glu	Arg
			85						90				95		
Glu	Gln	Gly	Ile	Thr	Ile	Asp	Val	Ala	Tyr	Arg	Tyr	Phe	Ser	Thr	Asn
			100					105					110		
Asn	Arg	Lys	Phe	Ile	Ile	Ala	Asp	Thr	Pro	Gly	His	Glu	Gln	Tyr	Thr
		115					120					125			
Arg	Asn	Met	Ile	Thr	Gly	Gly	Ser	Thr	Ala	Asn	Leu	Ala	Ile	Ile	Leu
	130					135					140				
Val	Asp	Ala	Arg	Met	Gly	Val	Ile	Thr	Gln	Thr	Arg	Arg	His	Thr	Phe
145					150				155						160
Leu	Val	Ser	Leu	Leu	Gly	Ile	Lys	His	Val	Val	Leu	Ala	Val	Asn	Lys
			165						170					175	
Met	Asp	Leu	Val	Asp	Phe	Ser	Glu	Glu	Arg	Phe	Asn	Glu	Ile	Val	Ala
		180					185					190			
Glu	Tyr	Lys	Lys	Phe	Val	Ala	Pro	Leu	Gly	Ile	Pro	Asp	Val	Thr	Cys
	195					200					205				
Ile	Pro	Leu	Ser	Ala	Leu	Asp	Gly	Asp	Asn	Val	Val	Asp	Lys	Ser	Glu
	210					215					220				
Arg	Thr	Pro	Trp	Tyr	Glu	Gly	Leu	Ser	Leu	Leu	Asp	Phe	Leu	Glu	Thr
225					230				235						240
Val	His	Ile	Asp	Ser	Asp	Asn	Asn	Phe	Ser	Asp	Phe	Arg	Phe	Pro	Val
			245					250						255	
Gln	Tyr	Val	Leu	Arg	Pro	Asn	Leu	Asp	Phe	Arg	Gly	Phe	Cys	Gly	Lys
		260					265					270			
Val	Ala	Ser	Gly	Ile	Ile	Arg	Lys	Gly	Asp	Lys	Val	Met	Ala	Leu	Pro

275		280		285
Ser Gly Lys Val	Ser His Val Lys	Ser Ile Val Thr	Phe Asp Gly Glu	
290	295	300		
Leu Asp Tyr Ala	Phe Pro Pro Gln	Ser Val Thr Leu	Thr Leu Glu Asp	
305	310	315	320	
Glu Ile Asp Val	Ser Arg Gly Glu	Met Leu Val His	Pro Asp Asn Leu	
	325	330	335	
Pro Val Val Asp	Arg Asn Phe Glu	Ala Met Leu Val	Trp Met Asp Glu	
	340	345	350	
Glu Pro Met Asp	Ile Asn Lys Ser	Phe Phe Ile Lys	Gln Thr Thr Asn	
	355	360	365	
Val Ser Arg Thr	Arg Ile Asp Ser	Ile Lys Tyr Lys	Val Asp Val Asn	
	370	375	380	
Thr Met Glu His	Ser Ser Val Pro	Phe Leu Ser Leu	Asn Glu Ile Ala	
385	390	395	400	
Arg Val Val Phe	Thr Thr Ala Lys	Glu Leu Phe Phe	Asp Pro Tyr Arg	
	405	410	415	
Lys Asn Lys Ser	Cys Gly Ser Phe	Ile Leu Ile Asp	Pro Ile Thr Asn	
	420	425	430	
Asn Thr Ser Ala	Val Gly Met Ile	Ile Asp Arg Val	Glu Lys Lys Asp	
	435	440	445	
Met Asn Ile Ala	Asp Asp Phe Pro	Val Leu Asn Leu	Pro Glu Leu Gly	
	450	455	460	
Ile Ala Pro Glu	His Tyr Glu Ala	Ile Glu Lys Ala	Val Lys Ser Leu	
465	470	475	480	
Ser Glu Gln Gly	Phe Glu Val Arg	Ile Glu Lys		
	485	490		

<210> 7599
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 7599
Tyr Val Lys Asp Asp Leu Phe Gly Ala Val Phe Ser Leu Pro Glu Val
1 5 10 15
Thr Val Ile Gly Arg Arg Pro Thr Ser Glu Asn Pro Phe Lys Trp
20 25 30
Pro Phe Gly Asp Met Pro Ser Glu Ser Pro Lys Ala Leu Pro Gly Leu
35 40 45
Asp Asp Phe Phe Leu Leu Lys Glu Ala Val His Leu Arg Tyr Leu His
50 55 60
His Ser Asn Gln Ala Leu Cys Leu Asn Leu Lys Lys Ser Leu Arg Met
65 70 75 80
Gln Leu

<210> 7600
 <211> 145
 <212> PRT
 <213> B.fragilis

<400> 7600
Ser Tyr Phe Cys Asn Pro Asn Met Ser Arg Ile Val Ala Ile Asp Tyr
1 5 10 15
Gly Arg Lys Arg Thr Gly Ile Ala Val Ser Asp Thr Met Gln Ile Ile
20 25 30
Ala Asn Gly Leu Thr Thr Val Pro Thr His Glu Leu Leu Asp Phe Ile
35 40 45

Thr Asn Tyr Val Lys Gln Glu Ser Val Glu Arg Ile Ile Ile Gly Leu
 50 55 60
 Pro Lys Gln Met Asn Asn Glu Val Ser Glu Asn Met Lys Asn Ile Glu
 65 70 75 80
 Pro Phe Val Arg Ser Leu Lys Lys Arg Leu Pro Asp Met Pro Val Glu
 85 90 95
 Tyr Val Asp Glu Arg Phe Thr Ser Val Leu Ala His Arg Thr Met Leu
 100 105 110
 Glu Ala Gly Leu Lys Lys Lys Asp Arg Gln Asn Lys Ala Leu Val Asp
 115 120 125
 Glu Ile Ser Ala Thr Ile Ile Leu Gln Ser Tyr Leu Glu Thr Lys Arg
 130 135 140
 Leu
 145

<210> 7601

<211> 356

<212> PRT

<213> B.fragilis

<400> 7601

Cys Ala Ile Cys Ser Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp
 1 5 10 15
 Thr Ile Leu Arg Ala Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr
 20 25 30
 Thr Ser Asp Gln Gly Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu
 35 40 45
 Asn Thr Leu Leu Ile Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu
 50 55 60
 Ile Glu Glu Tyr Asp Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu
 65 70 75 80
 Lys Tyr Asp Ala Lys Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro
 85 90 95
 Gly Val Tyr Val Ile Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp
 100 105 110
 Gly Asn Thr Asn Val Arg Phe His Gln Ala Asp Thr His Lys Arg Phe
 115 120 125
 Phe Ala Leu Leu Glu Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala
 130 135 140
 Asp Cys Gly Ser Cys Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His
 145 150 155 160
 Cys Lys His Phe Tyr Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn
 165 170 175
 Asp Ile Phe Ala Leu Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile
 180 185 190
 Gln Phe Glu Leu Asn Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys
 195 200 205
 Tyr Arg Leu Val Ile Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp
 210 215 220
 Leu Trp Glu Gly Glu Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr
 225 230 235 240
 Lys Ser Ser Thr Arg Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly
 245 250 255
 Lys Glu Arg Ile Phe Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg
 260 265 270
 Leu Pro Lys Ser Phe Met Ala Glu Asn Thr Val Phe Leu Leu Thr
 275 280 285
 Ala Leu Ile His Asn Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr
 290 295 300

Lys Ala Phe Gly Leu Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe
 305 310 315 320
 Arg Phe Ile Ser Val Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr
 325 330 335
 Val Leu Asn Ile Tyr Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys
 340 345 350
 Thr Glu Phe Gly
 355

<210> 7602
 <211> 185
 <212> PRT
 <213> B.fragilis

<400> 7602
 Phe Leu Cys Arg Lys Lys Gln Ser Ile Val His Ile Val Tyr Ile Cys
 1 5 10 15
 Lys Lys Arg Ile Thr Ile Leu Thr Ile Asp Phe Leu Tyr His Met Thr
 20 25 30
 Lys Glu Glu Leu Met Arg Lys Ala Ile Glu Leu Ser Arg Glu Asn Val
 35 40 45
 Ala Asn Gly Gly Gly Pro Phe Gly Ala Val Ile Ala Lys Asn Gly Glu
 50 55 60
 Ile Val Ala Thr Gly Val Asn Arg Val Thr Ala Ser Cys Asp Pro Thr
 65 70 75 80
 Ala His Ala Glu Val Ser Ala Ile Arg Ala Ala Ala Ser Lys Leu Gly
 85 90 95
 Thr Phe Asn Leu Ser Gly Tyr Glu Ile Tyr Thr Ser Cys Glu Pro Cys
 100 105 110
 Pro Met Cys Leu Gly Ala Ile Tyr Trp Ala Arg Leu Asp Lys Met Tyr
 115 120 125
 Tyr Gly Asn Asn Lys Thr Asp Ala Lys Asn Ile Gly Phe Asp Asp Ser
 130 135 140
 Phe Ile Tyr Asp Glu Leu Glu Leu Lys Pro Glu Asn Arg Lys Leu Pro
 145 150 155 160
 Ser Glu Val Leu Leu His Asp Glu Ala Ile Lys Ala Phe Glu Glu Trp
 165 170 175
 Met Glu Lys Glu Asp Lys Ile Glu Tyr
 180 185

<210> 7603
 <211> 216
 <212> PRT
 <213> B.fragilis

<400> 7603
 Arg Glu Arg Arg Ile Gln Pro Asp Ala Thr Tyr His Gln Tyr Thr Ser
 1 5 10 15
 Thr Ser Ala Thr Asp His Pro Pro Asp Glu Arg Cys Arg Arg Val Arg
 20 25 30
 Asn Arg Arg Asn Arg Arg Asp Asn Arg Met Gln Leu Arg Ser His Pro
 35 40 45
 Gln Gln Phe Ile Gln Gly Thr Glu Lys Ser Lys Arg His Leu Pro Ala
 50 55 60
 Asn His Thr Thr Lys Lys Lys Glu Lys Arg Ser Met Asn Ile Glu Glu
 65 70 75 80
 Leu Leu Asn Lys Tyr Phe Glu Gly Glu Thr Thr Cys Glu Glu Glu Arg
 85 90 95
 Glu Leu Arg Arg Phe Phe Thr Arg Gly Ile Val Pro Glu His Leu Gln

100	105	110
Met Tyr Arg Pro Met Phe Ala Phe Leu Asn Glu Glu Asn Arg Gln Ser		
115	120	125
Lys Thr Ala Val Pro Glu Val Pro Lys Thr Ser Val Pro Leu Arg Arg		
130	135	140
Arg Leu Leu Tyr Ile Phe Ser Gly Met Ala Ala Gly Ile Leu Leu Ile		
145	150	155
Leu Gly Ile Ala Gly Leu Asn Arg His Phe Asn Thr Ser Thr Ala Asn		
165	170	175
Tyr Val Ile Ile Asp Gly Lys Cys Tyr Thr Asp Ala Lys Leu Val Arg		
180	185	190
Glu Gln Ala Met Ile Ala Phe Arg Asp Val Ser Ile Ser Glu Glu Glu		
195	200	205
Val Phe Ala Thr Leu Phe Ser Glu		
210	215	

<210> 7604

<211> 659

<212> PRT

<213> B.fragilis

<400> 7604

Val Ser Leu Arg Leu Ile Met Arg Arg Ile Leu Leu Thr Tyr Ile Leu		
1	5	10
Leu Val Val Gly Leu Leu Thr Ala Gln Ala Gln Phe Asn Pro Thr Gln		
20	25	30
Gln Val Asp Pro Arg Thr Gly Arg Asp Ala Asn Gly Asn Gln Ile Asp		
35	40	45
Pro Ala Met Arg Val Gln Glu Asp Ser Thr Asp Val Glu Ile Gln Gly		
50	55	60
Leu Pro Pro Thr Leu Tyr Met Trp His Val Ser Glu Asn Leu Gly Thr		
65	70	75
Ile Gln Arg Ile Pro Ala Asp Thr Ala Thr His Met Phe Gln Asn Thr		
85	90	95
Asn Leu Val Glu Gly Leu Thr Gly His Tyr Asn Tyr Leu Gly Asn Leu		
100	105	110
Gly Ser Pro Arg Leu Ser Arg Leu Phe Phe Glu Arg Arg Asp Ala Glu		
115	120	125
Pro Thr Ile Phe Met Glu Pro Phe Ser Ser Phe Phe Ile Arg Pro Asp		
130	135	140
Glu Phe Asn Phe Thr Asn Ser Asn Val Pro Phe Thr Asn Leu Thr Tyr		
145	150	155
Tyr Lys Ala Gly Asn Lys Ile Asn Gly Glu Glu Arg Phe Lys Ser Tyr		
165	170	175
Phe Ser Val Asn Val Asn Lys Arg Leu Ala Phe Gly Phe Asn Phe Asp		
180	185	190
Tyr Leu Tyr Gly Arg Gly Tyr Tyr Asn Asn Gln Asn Thr Ser Tyr Phe		
195	200	205
Asn Ala Ala Leu Phe Gly Ser Tyr Ile Gly Asp Arg Tyr Glu Ala Thr		
210	215	220
Leu Leu Tyr Ser Asn Asn Tyr Leu Lys Met Asn Glu Asn Gly Gly Ile		
225	230	235
Thr Asp Asp Arg Tyr Ile Thr Arg Pro Glu Glu Met Ala Glu Gly Lys		
245	250	255
Lys Glu Tyr Glu Ser Gln Asn Ile Pro Thr Leu Leu Ser Lys Ser Ala		
260	265	270
Asn Arg Asn Lys Asp Phe Tyr Ile Phe Leu Thr Gln Arg Tyr Lys Leu		
275	280	285
Gly Phe Thr Arg Glu Val Glu Lys Ala Lys Asp Asp Thr Thr Asn Thr		

290 295 300
 Gln Lys Thr Glu Phe Val Pro Val Thr Ser Phe Ile His Thr Met Lys
 305 310 315 320
 Val Glu Arg Ser Arg His Gln Phe Thr Ser Glu Asp Glu Leu Tyr Lys
 325 330 335
 Ile Tyr Pro Glu Ala Tyr Ile Gln Pro Gly Asn Lys Leu Val Asn Asp
 340 345 350
 Ser Thr Ser Tyr Ile Gly Val Lys Asn Thr Leu Gly Ile Ala Leu Leu
 355 360 365
 Glu Gly Phe Asn Lys Tyr Ala Lys Ala Gly Leu Thr Ala Phe Ile Ser
 370 375 380
 His Lys Leu Ser Asn Tyr Arg Leu Met Asp Arg Asp Ser Val Ser Val
 385 390 395 400
 Asp Lys Tyr Ser Glu His Glu Val Phe Val Gly Gly Glu Leu Ala Lys
 405 410 415
 Arg Gln Gly Lys Thr Leu His Tyr Arg Ala Met Gly Glu Val Gly Ile
 420 425 430
 Leu Asp Lys Ala Ile Gly Gln Phe Arg Val Asn Ala Asn Leu Asp Leu
 435 440 445
 Asn Phe Arg Leu Trp Lys Asp Thr Val Ser Phe Ile Ala Arg Gly Ser
 450 455 460
 Ile Ser Asn Thr Leu Pro Ala Phe Tyr Met Arg His Tyr His Ser Lys
 465 470 475 480
 Tyr Phe Tyr Trp Asp Asn Asp Asn Met Glu Lys Glu Phe Arg Thr Arg
 485 490 495
 Leu Glu Gly Glu Leu Asn Ile Glu His Trp Gln Thr Asn Leu Lys Ala
 500 505 510
 Gly Val Glu Asn Ile Lys Asn Tyr Thr Tyr Phe Asn Gln Lys Ala Leu
 515 520 525
 Pro Gln Gln Asn Gly Gly Asn Ile Gln Val Leu Ser Ala Thr Leu Ser
 530 535 540
 Gln Asn Phe Arg Leu Gly Ile Leu His Leu Asp Asn Glu Val Thr Trp
 545 550 555 560
 Gln Lys Ser Ser Asn Asn Thr Val Leu Pro Leu Pro Glu Leu Ser Leu
 565 570 575
 Tyr His Asn Leu Tyr Ile Gln Thr Thr Leu Ala Lys Lys Val Leu His
 580 585 590
 Val Gln Leu Gly Ala Asp Val Arg Tyr Phe Thr Lys Tyr Tyr Ala Pro
 595 600 605
 Ala Tyr Thr Pro Ala Ile Gln Gln Phe His Leu Gln Pro Glu Asp Asp
 610 615 620
 Gln Val Lys Ile Gly Gly Tyr Pro Ile Ile Asn Val Tyr Ala Asn Leu
 625 630 635 640
 Gln Leu Lys Arg Thr Arg Leu Phe Ala Met Met Tyr His Val Asn Gln
 645 650 655
 Gly Asn Gly

<210> 7605

<211> 369

<212> PRT

<213> B.fragilis

<400> 7605

Ser Lys Ser Arg Ile Lys Glu Lys Asn Met Ala Glu Glu Val Val Leu
 1 5 10 15
 Met Lys Gly Asn Glu Ala Ile Ala His Ala Ala Ile Arg Cys Gly Ala
 20 25 30
 Asp Gly Tyr Phe Gly Tyr Pro Ile Thr Pro Gln Ser Glu Val Leu Glu

[illegible]

<400> 7606

Leu	Pro	Glu	Arg	Lys	Pro	Cys	Arg	Ile	Ile	Val	Leu	Asn	Asn	Asn	Val
1				5					10					15	
Pro	Gln	Ile	Ser	Leu	Tyr	Tyr	Gln	Pro	Ser	Phe	Lys	Asp	Ser	Thr	Val
			20				25						30		
Asn	Ile	Ser	Arg	Gln	Asp	Trp	Glu	Val	Ser	Tyr	Asn	Leu	Gly	Asn	Ser
		35					40					45			
Trp	Asn	Lys	Val	Lys	Arg	Asn	Lys	Lys	Ala	Asn	Ser	Ser	Leu	Tyr	Lys
	50					55					60				
Val	Asp	Ile	Thr	Ile	Tyr	Pro	Glu	Leu	Ser	Leu	Lys	Asn	Leu	Val	Ile

65		70		75		80									
Thr	Gln	Ile	Tyr	Gln	Val	Leu	Phe	Asn	Leu	Ser	Pro	Ala	Ile	Glu	Val
				85					90					95	
Ser	Phe	Trp	Lys	Gly	Met	Lys	Phe	Thr	Ala	Gln	Met	Val	Ile	Pro	Val
			100					105					110		
Tyr	Asn	Asp	Gly	Tyr	Ala	Ser	Arg	Tyr	Asp	Lys	Leu	His	Pro	Gly	Phe
		115					120				125				
Leu	Glu	Leu	Ser	Gln	Thr	Val	Arg	Leu	Pro	Tyr	Asn	Phe	Trp	Ala	Thr
	130					135				140					
Leu	Ala	Ile	Gly	Ser	Phe	Asn	Asn	Ser	Arg	Tyr	Gly	Ile	Asp	Phe	Asn
145					150					155				160	
Leu	Ile	His	His	Phe	Lys	Asp	Glu	Arg	Phe	Ser	Ile	Glu	Gly	Arg	Ile
			165					170					175		
Gly	Tyr	Thr	Gly	Thr	Gly	Tyr	Trp	Glu	Gly	Phe	Thr	Met	His	Tyr	Gly
		180						185					190		
Thr	Lys	Met	Arg	Ala	Thr	Trp	Ser	Leu	Gly	Gly	Ser	Phe	Tyr	Trp	Pro
	195					200					205				
Arg	Tyr	Asn	Val	Glu	Leu	Asn	Ala	Arg	Val	Glu	Gln	Tyr	Leu	Leu	Lys
210					215					220					
Glu	Lys	Ala	Val	Arg	Val	Glu	Ala	Ile	Arg	His	Phe	Arg	Tyr	Ala	Ser
225				230						235				240	
Ile	Gly	Phe	Tyr	Ala	Met	Lys	Ala	Lys	Asp	Val	Lys	Ala	Asn	Gly	Gly
			245					250					255		
Phe	Arg	Phe	Gln	Ile	Ala	Leu	Pro	Pro	Tyr	Arg	Tyr	Lys	Arg	Lys	Gly
		260					265					270			
Tyr	Ile	Pro	Arg	Ile	Thr	Pro	Ser	Asn	Asn	Met	Gly	Met	Ser	Tyr	Asn
	275					280					285				
Ala	Gly	Asn	Glu	Gln	Tyr	Tyr	Tyr	Lys	Thr	Tyr	Arg	Ser	Ala	Pro	Asp
	290				295			300							
Asp	Asn	Ile	Met	Lys	Asn	Asn	Ser	Phe	Asn	Pro	Tyr	Phe	Thr	Leu	Ile
305				310				315						320	
Pro	Gln	His	Tyr	Asn	Leu	Thr	Leu	Phe	Ile	Ser	Ser				
			325				330								

<210> 7607
 <211> 153
 <212> PRT
 <213> B.fragilis

<400> 7607

Lys	Lys	Arg	Ser	Met	Asn	Lys	Val	Ile	Arg	Thr	Thr	Trp	Ile	Ile	Leu
1				5				10					15		
Leu	Leu	Thr	Val	Ala	Ser	Gly	Met	Ala	Arg	Ala	Gln	Gln	Gly	Leu	Gln
		20					25					30			
Ile	Ala	Ser	Val	Phe	Gln	Lys	Tyr	Gly	Lys	Gln	Lys	Gly	Val	Thr	Met
	35					40					45				
Val	Glu	Leu	Ser	Asn	Glu	Met	Leu	Glu	Thr	Tyr	Gln	Met	Thr	Leu	Tyr
	50				55			60							
Lys	Ser	Leu	Val	Phe	Lys	Asp	Val	Glu	Glu	Ala	Leu	Pro	Thr	Ile	Leu
65				70				75					80		
Asn	Cys	Leu	Asp	Ala	Asp	Lys	Lys	Lys	Ala	Lys	Lys	Val	Lys	Glu	Val
			85					90					95		
Val	Ala	Gly	Gly	Gln	Ile	Gln	Ser	Gly	Tyr	Tyr	Gln	Leu	Pro	Gln	Leu
		100					105					110			
Lys	Glu	Asp	Val	Asn	Arg	Phe	Ile	Leu	Phe	Lys	Thr	Gly	Lys	Lys	Gly
	115					120					125				
Ser	Ala	Thr	Leu	Ile	Tyr	Ile	Glu	Gly	Glu	Leu	Asp	Ala	Asp	Asp	Leu
	130					135				140					
Val	Thr	Met	Leu	Phe	Met	Lys	Lys	Asn							

145

150

<210> 7608
 <211> 330
 <212> PRT
 <213> B.fragilis

<400> 7608

Lys Asp Met Ser Asn Lys Ile Ile Lys Trp Gly Phe Ile Gly Cys Gly
 1 5 10 15
 Glu Val Thr Lys Tyr Lys Ser Gly Pro Ala Phe Gln Lys Val Glu Gly
 20 25 30
 Ser Lys Val Val Ala Val Met Ser Arg Asp Gly Lys Lys Ala Lys Ala
 35 40 45
 Tyr Ala Lys Glu Arg Asn Ile Pro Lys Trp Tyr Asp Asp Ala Gln Glu
 50 55 60
 Leu Ile Asp Asp Pro Glu Val Asn Ala Val Tyr Ile Ala Thr Pro Pro
 65 70 75 80
 Ser Ser His Ala Thr Tyr Ala Ile Met Ser Met Lys Ala Gly Lys Pro
 85 90 95
 Val Tyr Ile Glu Lys Pro Met Ala Gln Thr Tyr Glu Glu Cys Ala Arg
 100 105 110
 Ile Asn Arg Ile Ser Gln Glu Thr Gly Val Pro Cys Phe Val Ala Tyr
 115 120 125
 Tyr Arg Arg Tyr Leu Pro Tyr Phe Met Lys Val Lys Glu Leu Val Asp
 130 135 140
 Lys Gly Thr Ile Gly Asn Val Ile Asn Val Gln Ile Arg Phe Ala Gln
 145 150 155 160
 Pro Pro Arg Asp Leu Asp Tyr Asn Arg Glu Asn Leu Pro Trp Arg Val
 165 170 175
 Gln Ala Asp Ile Ala Gly Gly Gly Tyr Phe Tyr Asp Leu Ala Pro His
 180 185 190
 Gln Ile Asp Leu Leu Gln Glu Met Phe Gly Cys Ile Leu Glu Ala Ser
 195 200 205
 Gly Tyr Lys Ser Asn Arg Gly Gly Leu Tyr Pro Ala Glu Asp Thr Leu
 210 215 220
 Ser Ala Cys Phe Gln Phe Asp Asn Gly Leu Val Gly Ser Gly Ser Trp
 225 230 235 240
 Cys Phe Val Ala His Asp Ser Ala Arg Glu Asp Arg Ile Glu Ile Ile
 245 250 255
 Gly Asp Lys Gly Met Ile Cys Phe Ser Val Phe Thr Tyr Asp Pro Ile
 260 265 270
 Ala Leu His Thr Glu Arg Gly Arg Glu Glu Ile Met Val Glu Asn Pro
 275 280 285
 Glu His Val Gln Gln Pro Leu Ile Gln Ala Val Val Asp His Leu Leu
 290 295 300
 Gly Lys Ser Thr Cys Ser Cys Asp Gly Glu Ser Ala Thr Thr Thr Asn
 305 310 315 320
 Trp Val Met Asp Lys Ile Leu Gly Lys Ile
 325 330

<210> 7609
 <211> 376
 <212> PRT
 <213> B.fragilis

<400> 7609

Leu Phe Trp Ser Met Lys Lys Leu Gly Leu Leu Leu Met Leu Phe Thr
 1 5 10 15

Phe Ala Ala Cys Thr Asn Asp Asp Phe Ser Val Leu Gln Glu Asn Glu
 20 25 30
 Glu Ile Thr Leu Pro Thr Ala Val Thr Arg Ala Ser Gly Asp Lys Leu
 35 40 45
 Tyr Asp Leu Leu Gly Tyr Gly Tyr Asp Val Thr Gly Leu Tyr Phe Thr
 50 55 60
 Ser Ala Ser Ala Lys Ser Lys Ile Ile Asp Ile Val Ala Leu Arg Lys
 65 70 75 80
 Asp Tyr Glu Glu Arg Val Asp Ile Gly Ala Val Pro Ser Asn Tyr Ala
 85 90 95
 Arg Met Thr Ser Gly Thr Thr Ala Gln Asp Tyr Thr Arg Asn Val Thr
 100 105 110
 Ser Lys Val Lys Leu Gly Gly Ala Leu Ser Leu Phe Ser Gly Ser Leu
 115 120 125
 Ser Ser Ser Phe Ser Ser Thr Gln His Tyr Thr Ser Lys Tyr Ser Ile
 130 135 140
 Ala Asp Tyr Thr Ser Phe Ile Arg Arg Arg Arg Leu Phe Leu Thr Ala
 145 150 155 160
 Ser Thr Glu Leu Leu Ser Lys Tyr Leu Thr Lys Met Phe Val Asp Asp
 165 170 175
 Leu Ser Lys Gln Ser Pro Ser Phe Ile Ile Gln His Tyr Gly Thr His
 180 185 190
 Val Leu Thr Asp Ile Thr Leu Gly Arg Ile Thr Val Leu Tyr Arg
 195 200 205
 Ser Ser Ile Asn Thr Ser Lys Lys Thr Ala Thr Val Glu Ala Gly Cys
 210 215 220
 Ala Ser Gly Ile Lys Asn Met Phe Asn Leu Ser Val Asp Gly His Tyr
 225 230 235 240
 Asp Gln Thr Leu Val Lys Asp Asn Ser Glu Gln Glu Ile Val Tyr Arg
 245 250 255
 Thr Glu Gly Gly Asp Pro Ser Arg Ala Leu Ile Gly Gln Leu Asn Tyr
 260 265 270
 Asp Ser Lys Asn Pro Ser Val Ile Asp Ile Ser Ser Trp Gln Gln Ser
 275 280 285
 Cys Asp Asp Asn Asn Met Thr Leu Val Asp Ala Glu Pro Gly Ser Leu
 290 295 300
 Ile Pro Ile Tyr Asp Leu Val Ser Asp Met Gly Lys Lys Glu Gln Leu
 305 310 315 320
 Lys Leu Ala Val Glu Asn Tyr Leu Lys Glu His Ser Tyr Val Asp Ile
 325 330 335
 Asp Asp Ser Ser Lys Gly Gly Ala Val Arg Asn Asn Ser Arg Gly His
 340 345 350
 Asn Thr Ser Ser Tyr Gly Asn Ser Thr Arg Val Ile Gly Ala Asn Gly
 355 360 365
 Asn Arg Ser Thr Tyr Arg Arg Pro
 370 375

<210> 7610

<211> 325

<212> PRT

<213> B.fragilis

<400> 7610

Lys Lys Gly Gly Lys Met Ile Gln Lys Thr Tyr Arg Leu Trp Val Ala
 1 5 10 15
 Ser Leu Leu Thr Leu Cys Ser Ala Ser Ala Ala Ala Gln Gln Lys Val
 20 25 30
 Glu Ile Leu Pro Phe Gly Asn Met Asp Gln Trp Val Thr Arg Glu Ile
 35 40 45

Lys Glu Ser Gly Ile Ile Gly Gly Asn Thr Lys Lys Val Tyr Ala Ile
 50 55 60
 Gly Pro Thr Glu Thr Ile Val Gly Ala Lys Pro Tyr Thr Asn Lys Gly
 65 70 75 80
 Gly Ser Pro Trp Gly Thr Ser Asn Val Met Ala Arg Val Ser Gly Ile
 85 90 95
 Thr Lys Thr Asn Thr Ser Val Phe Pro Glu Thr Arg Gly Asp Gly Phe
 100 105 110
 Cys Ala Arg Leu Asp Thr Arg Met Glu Ser Val Lys Val Leu Gly Ile
 115 120 125
 Val Asp Ile Thr Val Leu Ala Ala Gly Ser Met Phe Leu Gly Thr Val
 130 135 140
 His Glu Pro Ile Lys Ser Thr Lys Asn Pro Asn Lys Met Leu Gln Met
 145 150 155 160
 Gly Ile Pro Phe Thr Glu Arg Pro Ser Ala Ile Gln Phe Asp Tyr Lys
 165 170 175
 Val Lys Met Ser Asp Arg Glu Asn Arg Ile Arg Ala Thr Gly Phe Ser
 180 185 190
 Lys Ile Thr Asp Val Pro Gly Lys Asp Phe Pro Ala Val Ile Leu Leu
 195 200 205
 Leu Gln Lys Arg Trp Glu Asp Ala Lys Gly Asn Val Tyr Ala Lys Arg
 210 215 220
 Ile Gly Thr Met Val Asn Tyr Tyr Tyr His Ser Thr Asp Trp Lys Asn
 225 230 235 240
 Gly Ser Lys Tyr Asp Ile Met Tyr Gly Asp Ile Thr Lys Asp Pro Ala
 245 250 255
 Tyr Lys Ala His Met Met Arg Leu Gln Ala Ser Glu Tyr Phe Thr Val
 260 265 270
 Asn Ser Lys Gly Glu Ser Val Pro Ile His Glu Val Ala Trp Gly Glu
 275 280 285
 Ala Asp Asp Val Pro Thr His Met Ile Leu Gln Phe Thr Ser Ser His
 290 295 300
 Gly Gly Ala Tyr Ile Gly Ser Pro Gly Asn Ser Leu Tyr Ile Asp Asn
 305 310 315 320
 Val Lys Leu Ile Tyr
 325

<210> 7611

<211> 411

<212> PRT

<213> B.fragilis

<400> 7611

Asp Lys Arg Gly Tyr Thr Ser Pro Thr Pro Ile Gln Glu Gln Ser Ile
 1 5 10 15
 Pro Ile Leu Leu Gln Gly Lys Asp Leu Leu Gly Cys Ala Gln Thr Gly
 20 25 30
 Thr Gly Lys Thr Ala Ala Phe Ser Ile Pro Ile Leu Gln Lys Leu Tyr
 35 40 45
 Lys Thr Asp His Arg Lys Gly Ile Lys Ala Leu Val Leu Thr Pro Thr
 50 55 60
 Arg Glu Leu Ala Ile Gln Ile Gly Glu Ser Phe Glu Ala Tyr Gly Arg
 65 70 75 80
 Tyr Thr Gly Leu Lys His Ala Val Ile Phe Gly Gly Val Gly Gln Lys
 85 90 95
 Pro Gln Thr Asp Ala Leu Arg Ser Gly Ile Gln Ile Leu Val Ala Thr
 100 105 110
 Pro Gly Arg Leu Leu Asp Leu Ile Ser Gln Gly Phe Ile Ser Leu Asn
 115 120 125

Ser Leu Asp Phe Phe Val Leu Asp Glu Ala Asp Arg Met Leu Asp Met
 130 135 140
 Gly Phe Ile His Asp Ile Lys Arg Ile Leu Lys Leu Leu Pro Ala Arg
 145 150 155 160
 Arg Gln Thr Leu Phe Phe Ser Ala Thr Met Pro Pro Glu Ile Glu Thr
 165 170 175
 Leu Ala Asn Ser Met Leu Thr Lys Pro Glu Lys Val Glu Val Thr Pro
 180 185 190
 Ala Ser Ser Thr Val Asp Ile Ile Ser Gln Gln Val Tyr Phe Val Glu
 195 200 205
 Lys Lys Glu Lys Lys Asp Leu Leu Ile His Leu Leu Lys Asp Thr Ser
 210 215 220
 Ile Glu Ser Val Leu Ile Phe Thr Arg Thr Lys Tyr Gly Ala Asp Lys
 225 230 235 240
 Leu Ala Arg Val Leu Thr Lys Ala Gly Ile Gly Ala Glu Ala Ile His
 245 250 255
 Gly Asn Lys Thr Gln Asn Ala Arg Gln Arg Ala Leu Thr Asn Phe Lys
 260 265 270
 Asn His Thr Leu Arg Ala Leu Ile Ala Thr Asp Ile Ala Ala Arg Gly
 275 280 285
 Ile Asp Val Asp Gln Leu Ser His Val Ile Asn Tyr Glu Leu Pro Asn
 290 295 300
 Val Pro Glu Thr Tyr Val His Arg Ile Gly Arg Thr Gly Arg Ala Gly
 305 310 315 320
 His Glu Gly Val Ala Ile Ser Phe Cys Glu Ser Glu Glu Leu Pro Tyr
 325 330 335
 Leu Lys Asp Ile Gln Lys Leu Ile Gly Lys Asn Ile Pro Val Val Lys
 340 345 350
 Asp His Pro Phe Val Thr Thr Glu Gly Ile Lys Ala Gln Glu Glu Lys
 355 360 365
 Gln Glu Glu Ile Lys Val Lys Ala Lys Ala Asn Lys Thr Tyr Arg Gly
 370 375 380
 Ser Arg Ala Asn Gly Asp Phe Trp Arg Arg Lys Lys Gln Lys Thr Asn
 385 390 395 400
 Gln Pro Ser Ser Thr Lys Gln Glu Lys Arg Lys
 405 410

<210> 7612

<211> 332

<212> PRT

<213> B.fragilis

<400> 7612

Ser Lys Phe Ile Thr Arg Lys Thr Lys Met Tyr Pro Leu Lys Phe Glu
 1 5 10 15
 Pro Ile Leu Lys Gln Thr Leu Trp Gly Gly Asp Lys Ile Ile Pro Phe
 20 25 30
 Lys His Leu Asn Asp Asp Leu Lys Gly Val Gly Glu Ser Trp Glu Ile
 35 40 45
 Ser Gly Val Glu Asn Asn Glu Ser Val Val Ala Asn Gly Pro Asp Lys
 50 55 60
 Gly Leu Thr Leu Thr Asp Met Val Lys Lys Tyr Arg Glu Glu Leu Val
 65 70 75 80
 Gly Glu Ala Asn Tyr Ala Arg Phe Gly Asn Glu Phe Pro Leu Leu Ile
 85 90 95
 Lys Phe Ile Asp Ala Lys Gln Asp Leu Ser Ile Gln Val His Pro Thr
 100 105 110
 Asp Glu Leu Ala Lys Lys Arg His Asn Ser Lys Gly Lys Thr Glu Met
 115 120 125

Trp Tyr Val Val Gly Ala Asp Glu Gly Ala Lys Leu Arg Ser Gly Phe
 130 135 140
 Ser Glu Gln Ile Thr Pro Lys Glu Tyr Lys Asp Arg Val His Asn Asn
 145 150 155 160
 Thr Ile Thr Asp Val Leu Gln Glu Tyr Glu Ile His Pro Gly Asp Val
 165 170 175
 Phe Phe Leu Pro Ala Gly Arg Ile His Ser Ile Gly Ala Gly Ala Phe
 180 185 190
 Ile Ala Glu Ile Gln Gln Thr Ser Asp Ile Thr Tyr Arg Ile Tyr Asp
 195 200 205
 Phe Asn Arg Lys Asp Ala Asn Gly Lys Thr Arg Glu Leu His Thr Ser
 210 215 220
 Gln Ala Leu Asp Ala Ile Asn Tyr Glu Val Leu Asp Asp Tyr Arg Thr
 225 230 235 240
 Lys Tyr Glu Pro Leu Lys Asp Glu Pro Val Glu Leu Val Ala Cys Pro
 245 250 255
 Tyr Phe Thr Thr Ser Val Tyr Asp Met Ser Glu Gln Ile Ser Cys Asp
 260 265 270
 Tyr Ser Glu Leu Asp Ser Phe Val Ile Phe Ile Cys Ile Glu Gly Ser
 275 280 285
 Cys Leu Met Thr Asp Asn Glu Gly Asn Glu Val Arg Leu Gly Ala Gly
 290 295 300
 Glu Thr Val Leu Leu Pro Ala Thr Thr Gln Glu Leu Thr Ile Val Pro
 305 310 315 320
 Gln Glu Gly Asn Val Lys Leu Leu Glu Thr Tyr Val
 325 330

<210> 7613

<211> 185

<212> PRT

<213> B.fragilis

<400> 7613

Val Asn Ile Ile Lys Met Lys Glu Glu Ile Ile Ile Ala Gly Phe Gly
 1 5 10 15
 Gly Gln Gly Val Leu Ser Met Gly Lys Ile Leu Ala Tyr Ser Gly Leu
 20 25 30
 Met Glu Gly Lys Glu Val Thr Trp Met Pro Ala Tyr Gly Pro Glu Gln
 35 40 45
 Arg Gly Gly Thr Ala Asn Val Thr Val Ile Val Ser Asp Asp Lys Ile
 50 55 60
 Ser Ser Pro Ile Leu Ser Lys Tyr Asp Thr Ala Ile Ile Leu Asn Gln
 65 70 75 80
 Pro Ser Leu Glu Lys Phe Glu Ser Arg Val Lys Pro Gly Gly Ile Leu
 85 90 95
 Ile Tyr Asp Gly Tyr Gly Ile Ile Asn Pro Pro Thr Arg Lys Asp Ile
 100 105 110
 Lys Val Tyr Arg Ile Asp Ala Met Asp Ala Ala Asn Glu Met Asn Asn
 115 120 125
 Ala Lys Ala Phe Asn Met Ile Val Leu Gly Gly Leu Leu Lys Leu Arg
 130 135 140
 Pro Ile Val Thr Leu Glu Asn Val Val Lys Gly Leu Lys Lys Thr Leu
 145 150 155 160
 Pro Glu Arg His His His Leu Ile Pro Met Asn Glu Glu Ala Ile Lys
 165 170 175
 Lys Gly Met Glu Leu Ile Arg Glu Ala
 180 185

<210> 7614

<211> 185
 <212> PRT
 <213> B.fragilis

<400> 7614

Asp Met Ile Leu Pro Ile Tyr Val Tyr Gly Gln Pro Val Leu Arg Gln
 1 5 10 15
 Val Ala Glu Asp Ile Thr Val Asp Tyr Pro Asn Leu Lys Glu Leu Ile
 20 25 30
 Glu Asn Met Phe Glu Thr Met Asp His Ala Asp Gly Val Gly Leu Ala
 35 40 45
 Ala Pro Gln Ile Gly Leu Pro Ile Arg Val Val Val Ile Asn Leu Asp
 50 55 60
 Val Leu Ser Glu Asp Tyr Pro Glu Tyr Lys Asp Phe Arg Lys Ala Tyr
 65 70 75 80
 Ile Asn Ala His Ile Asp Val Val Glu Gly Glu Glu Val Ser Met Glu
 85 90 95
 Glu Gly Cys Leu Ser Leu Pro Gly Ile His Glu Ser Val Lys Arg Gly
 100 105 110
 Ser Lys Ile His Val Arg Tyr Met Asp Glu Asn Phe Val Glu His Asn
 115 120 125
 Glu Val Val Glu Gly Phe Leu Ala Arg Val Met Gln His Glu Phe Asp
 130 135 140
 His Leu Asp Gly Lys Met Phe Ile Asp His Ile Ser Pro Leu Arg Lys
 145 150 155 160
 Gln Met Ile Lys Gly Lys Leu Asn Thr Met Leu Lys Gly Lys Ala Arg
 165 170 175
 Ser Ser Tyr Lys Met Lys Gln Val Lys
 180 185

<210> 7615
 <211> 312
 <212> PRT
 <213> B.fragilis

<400> 7615

Ser Ile Asp Met Asn Asp Ser Lys Leu Met Asn Arg Ala Ala Asp Asn
 1 5 10 15
 Ile Arg Ile Leu Ala Ala Ser Met Val Glu Lys Ala Asn Ser Gly His
 20 25 30
 Pro Gly Gly Ala Met Gly Gly Ala Asp Phe Val Asn Val Leu Phe Ser
 35 40 45
 Glu Phe Leu Val Tyr Asp Pro Gln Asn Pro Arg Trp Glu Gly Arg Asp
 50 55 60
 Arg Phe Phe Leu Asp Pro Gly His Met Ser Pro Met Leu Tyr Ser Val
 65 70 75 80
 Leu Ala Phe Thr Gly Lys Tyr Thr Leu Asp Glu Leu Lys Gln Phe Arg
 85 90 95
 Gln Trp Gly Ser Pro Thr Pro Gly His Pro Glu Val Asn Val Asp Arg
 100 105 110
 Gly Val Glu Asn Thr Ser Gly Pro Leu Gly Gln Gly His Thr Tyr Ala
 115 120 125
 Val Gly Ala Ala Ile Ala Ala Lys Phe Leu Lys Ala Arg Phe Gly Glu
 130 135 140
 Val Met Asn Gln Thr Ile Tyr Ala Tyr Ile Ser Asp Gly Gly Ile Gln
 145 150 155 160
 Glu Glu Ile Ser Gln Gly Ala Gly Arg Ile Ala Gly Thr Leu Gly Leu
 165 170 175
 Asp Asn Leu Ile Met Phe Tyr Asp Ser Asn Asp Val Gln Leu Ser Thr

180	185	190
Asn Thr Glu Asp Val Thr Thr	Glu Asn Val Ala Met Lys Tyr Glu Ala	
195	200	205
Trp Asp Trp Lys Val Ile Thr	Ile Asn Gly Asn Asp Pro Asp Glu Ile	
210	215	220
Arg Lys Ala Leu Thr Glu Ala	Lys Ala Glu Lys Asn Arg Pro Thr Leu	
225	230	235
Ile Ile Gly Lys Thr Thr Met	Gly Lys Gly Ala Arg Arg Ala Asp Gly	
245	250	255
Ser Ser Tyr Glu Ala Asp Cys	Ala Thr His Gly Ala Pro Leu Gly Gly	
260	265	270
Asp Ala Tyr Val Asn Thr Ile	Lys Asn Leu Gly Gly Asn Pro Glu Asn	
275	280	285
Pro Phe Thr Ile Phe Pro Glu	Val Ala Glu Leu Tyr Ala Lys Arg Arg	
290	295	300
Gly Arg Thr Glu Glu Asp Cys	Cys	
305	310	

<210> 7616

<211> 376

<212> PRT

<213> B.fragilis

<400> 7616

Pro Asn Cys Met	Pro Asn Ala Ala Glu Glu Leu Lys Lys Ile Val Ala
1	5 10 15
Asp Lys Tyr Ala Ala Lys Ala Glu Trp Ala Lys Ala Asn Pro Glu Lys	
20	25 30
Ala Ala Lys Leu Ala Glu Phe Phe Ser Gly Lys Ala Pro Lys Val Asn	
35	40 45
Trp Asp Ala Ile Glu Gln Lys Ala Gly Gly Ala Thr Arg Ala Gly Ser	
50	55 60
Ala Thr Val Leu Gly Ala Leu Ala Thr Gln Val Glu Asn Met Ile Val	
65	70 75 80
Ser Ser Ala Asp Leu Ser Asn Ser Asp Lys Thr Asp Gly Phe Leu Lys	
85	90 95
Lys Thr His Ala Phe Lys Lys Gly Asp Phe Ser Gly Ala Phe Leu Gln	
100	105 110
Ala Gly Val Ser Glu Leu Ser Met Ala Cys Ile Cys Ile Gly Met Ser	
115	120 125
Leu His Gly Gly Ile Ile Ala Ala Cys Gly Thr Phe Phe Val Phe Ser	
130	135 140
Asp Tyr Met Lys Pro Ala Leu Arg Met Ala Ala Leu Met Glu Gln Pro	
145	150 155 160
Val Lys Phe Ile Trp Thr His Asp Ala Phe Arg Val Gly Glu Asp Gly	
165	170 175
Pro Thr His Glu Pro Val Glu Gln Glu Ala Gln Val Arg Leu Leu Glu	
180	185 190
Lys Leu Lys Asn His Lys Gly His Asn Ser Met Leu Val Leu Arg Pro	
195	200 205
Ala Asp Val Glu Glu Thr Thr Ile Ala Trp Lys Leu Ala Met Glu Asn	
210	215 220
Met Ser Thr Pro Thr Ala Leu Ile Leu Ser Arg Gln Asn Ile Val Asn	
225	230 235 240
Leu Pro Ala Gly Thr Asp Tyr Ser Gln Ala Ala Lys Gly Ala Tyr Ile	
245	250 255
Ile Ala Asp Ala Asp Glu Asn Pro Asp Val Ile Leu Val Ala Ser Gly	
260	265 270
Ser Glu Val Ser Thr Leu Val Ala Gly Ala Glu Leu Leu Arg Lys Glu	

275					280					285					
Gly	Val	Lys	Val	Arg	Ile	Val	Ser	Ala	Pro	Ser	Glu	Gly	Leu	Phe	Arg
290					295					300					
Asn	Gln	Ser	Lys	Glu	Tyr	Gln	Glu	Ser	Ile	Leu	Pro	Ala	Gly	Ala	Lys
305					310					315					
Ile	Phe	Gly	Leu	Thr	Ala	Gly	Leu	Pro	Val	Asn	Leu	Glu	Gly	Leu	Val
320					325					330					
Gly	Ser	Asn	Gly	Lys	Val	Phe	Gly	Leu	Glu	Ser	Phe	Gly	Phe	Ser	Ala
335					340					345					
Pro	Tyr	Lys	Val	Leu	Asp	Glu	Lys	Leu	Gly	Phe	Thr	Ala	Glu	Asn	Val
350					355					360					
Tyr	Asn	Gln	Val	Lys	Ala	Met	Leu								
365					370					375					

<210> 7617
 <211> 135
 <212> PRT
 <213> B.fragilis

<400> 7617															
Ser	Asn	Asn	Met	Asp	Asn	Arg	Thr	Glu	Gln	Tyr	Ser	Leu	Arg	Glu	Leu
1				5					10					15	
Leu	Glu	Ser	Ile	Thr	Glu	Asn	Ile	Lys	Thr	Lys	Arg	Leu	Ala	Asp	Val
20					25					30					
Phe	Arg	Phe	Ile	Ser	Phe	His	Pro	Gly	Glu	Met	Tyr	Gly	Pro	His	Gln
35					40					45					
His	Leu	Arg	Ile	Glu	Ile	Asn	Tyr	Val	Lys	Lys	Gly	Ser	Cys	Ile	Leu
50					55					60					
His	Pro	Asp	His	Glu	Ser	Ile	Thr	Phe	Arg	Glu	Gly	Glu	Ile	Met	Ile
65					70					75					
Ile	Thr	Ser	Asp	Ile	Ser	His	Leu	Phe	Glu	Ala	Gly	Ala	Asp	Gly	Thr
85					90					95					
Thr	Leu	Met	Gln	Leu	Glu	Phe	Leu	Pro	Glu	Ile	Phe	Ser	His	Phe	Asn
100					105					110					
Leu	Asn	Ala	Thr	Ala	Asp	Ser	Asn	Gly	Ser	Ala	Leu	Leu	Trp	Thr	Asn
115					120					125					
Arg	Phe	Lys	Ile	Lys	Ile	Glu									
130					135										

<210> 7618
 <211> 205
 <212> PRT
 <213> B.fragilis

<400> 7618															
His	Ile	Ile	Met	Glu	Glu	Asn	Asn	Asn	Ile	Tyr	Pro	Ile	Phe	Asp	Arg
1				5					10					15	
Met	Leu	Thr	Arg	Gln	Asp	Lys	Glu	Glu	Leu	Leu	Lys	Gln	Arg	Gly	Val
20					25					30					
Met	Ile	Trp	Phe	Thr	Gly	Leu	Ser	Gly	Ser	Gly	Lys	Ser	Thr	Ile	Ala
35					40					45					
Ile	Ala	Leu	Glu	Arg	Glu	Leu	His	Lys	Arg	Gly	Leu	Cys	Arg	Ile	
50					55					60					
Leu	Asp	Gly	Asp	Asn	Ile	Arg	Thr	Gly	Ile	Asn	Asn	Leu	Gly	Phe	
65					70					75					
Ser	Glu	Thr	Asp	Arg	Val	Glu	Asn	Ile	Arg	Arg	Ile	Ala	Glu	Val	Ser
85					90					95					
Lys	Leu	Phe	Ile	Asp	Thr	Gly	Ile	Ile	Thr	Ile	Ala	Ala	Phe	Ile	Ser
100					105					110					

Pro	Asn	Asn	Asp	Ile	Arg	Glu	Met	Ala	Ala	Arg	Ile	Val	Gly	Pro	Asp
	115					120						125			
Asp	Phe	Leu	Glu	Ile	Phe	Val	Ser	Thr	Pro	Leu	Ala	Glu	Cys	Glu	Lys
	130					135					140				
Arg	Asp	Val	Lys	Gly	Leu	Tyr	Ala	Lys	Ala	Arg	Arg	Gly	Glu	Ile	Lys
	145				150				155						160
Asn	Phe	Thr	Gly	Ile	Ser	Ala	Pro	Phe	Glu	Ala	Pro	Glu	His	Pro	Ala
			165					170						175	
Leu	Ser	Leu	Asp	Thr	Ser	Val	Leu	Ser	Leu	Glu	Glu	Ser	Val	Asn	Arg
		180					185						190		
Leu	Leu	Glu	Ile	Val	Leu	Pro	Arg	Val	Ser	Arg	His	Glu			
	195						200					205			

<210> 7619

<211> 898

<212> PRT

<213> B.fragilis

<400> 7619

Leu	Ile	Ile	Ile	Pro	Thr	Thr	Met	Lys	Lys	Ser	Ile	Ile	Leu	Leu	Phe
1				5				10					15		
Ile	Ser	Leu	Leu	Ser	Pro	Leu	Cys	Ile	Lys	Ala	His	Gln	Pro	Glu	
		20					25					30			
Phe	Ser	Thr	Ala	Gly	Phe	Phe	Arg	Leu	Ala	Asp	Ser	Gly	Arg	Asp	Val
	35					40					45				
Tyr	Ser	Met	Asn	Pro	Ala	Trp	Arg	Phe	Tyr	Lys	Gly	Asn	Cys	Pro	Gly
	50					55					60				
Ala	Glu	Thr	Gly	Asn	Phe	Asp	Asp	Arg	Ser	Trp	Thr	Val	Val	Ser	Leu
	65			70				75						80	
Pro	His	Gly	Ile	Glu	Tyr	Leu	Pro	Thr	Glu	Ala	Ser	Gly	Cys	Ile	Asn
			85					90						95	
Tyr	Gln	Gly	Glu	Val	Trp	Tyr	Arg	Lys	Gln	Phe	Thr	Pro	Asp	Ala	Ala
		100					105					110			
Leu	Lys	Gly	Lys	Lys	Leu	Phe	Leu	His	Phe	Glu	Ala	Ile	Met	Gly	Lys
	115				120						125				
Ser	Lys	Ile	Tyr	Val	Asn	Gly	Lys	Leu	Leu	Ala	Glu	His	Phe	Gly	Gly
	130				135					140					
Tyr	Leu	Pro	Val	Val	Val	Asp	Val	Thr	Asp	Ala	Leu	Glu	Phe	Gly	Lys
	145			150					155						160
Glu	Asn	Leu	Ile	Ala	Val	Trp	Ala	Asp	Asn	Ser	Asn	Asp	Pro	Asn	Tyr
			165					170						175	
Pro	Pro	Gly	Lys	Gln	Gln	Glu	Val	Leu	Asp	Phe	Thr	Tyr	Phe	Gly	Gly
		180					185						190		
Ile	Tyr	Arg	Asp	Cys	Trp	Leu	Ile	Ala	His	Asn	Gln	Val	Phe	Ile	Thr
	195					200						205			
Asp	Pro	Asn	Tyr	Glu	Asn	Glu	Glu	Ala	Gly	Gly	Gly	Leu	Phe	Val	Ala
	210				215					220					
Tyr	Asn	Asn	Val	Ser	Asp	His	Ser	Ala	Glu	Val	Leu	Leu	Lys	Ile	Gln
	225			230					235					240	
Ile	Arg	Asn	Ser	Gly	Arg	Lys	Ala	Phe	Lys	Gly	Val	Val	Glu	Tyr	Glu
			245				250							255	
Leu	Gln	Gln	Pro	Asp	Gly	Gln	Gln	Val	Ala	Ser	Leu	Asn	Ser	Val	Ile
		260					265						270		
Arg	Ile	Lys	Pro	Gly	Lys	Ser	Thr	Tyr	Ser	Ser	Asp	Lys	Leu	Thr	Val
	275					280						285			
Lys	Gly	Pro	Met	Leu	Trp	Ser	Pro	Glu	Asn	Pro	Ala	Leu	Tyr	Asn	Leu
	290				295					300					
Ile	Val	Arg	Ile	Arg	Asp	Glu	Lys	Gly	Asn	Pro	Ile	Asp	Gly	Tyr	Arg
	305				310					315					320

Arg Arg Ile Gly Ile Arg Ser Ile Glu Phe Lys Gly Glu Asp Gly Phe
 325 330 335
 Trp Leu Asn Gly Lys Pro Tyr Glu Ala Pro Leu Ile Gly Ala Asn Arg
 340 345 350
 His Gln Asp Phe Ala Ile Val Gly Asn Ala Val Pro Asn Ser Ile His
 355 360 365
 Trp Arg Asp Ala Lys Lys Leu Arg Asp Ala Gly Met Lys Val Ile Arg
 370 375 380
 Asn Ala His Cys Pro Gln Asp Pro Ala Phe Met Asp Ala Cys Asp Glu
 385 390 395 400
 Leu Gly Leu Phe Val Ile Val Asn Thr Pro Gly Trp Gln Phe Trp Asn
 405 410 415
 Asp Ala Pro Val Phe Ala Gln Arg Val Tyr Ser Asp Ile Arg Asn Leu
 420 425 430
 Val Arg Arg Asp Arg Asn His Pro Cys Val Trp Met Trp Glu Pro Ile
 435 440 445
 Leu Asn Glu Thr Trp Tyr Pro Ala Asn Phe Ala Arg Asn Ala His Asp
 450 455 460
 Ile Val Glu Ala Glu Tyr Pro Tyr Pro Tyr Cys Tyr Ser Gly Cys Asp
 465 470 475 480
 Ser Glu Ala Lys Gly Lys Glu His Phe Gln Ile Leu Phe Thr His Pro
 485 490 495
 Leu Asn Gly Asp Gly Gly Ala Tyr Ser Thr Asn Asp Ile Lys Lys Gln
 500 505 510
 Leu Thr Tyr Phe Thr Arg Glu Trp Gly Asp Asn Val Asp Asp Trp Asn
 515 520 525
 Ser His Asn Ser Pro Ser Arg Val Ala Arg Asn Trp Gly Glu Gln Ala
 530 535 540
 Met Leu Ile Gln Ala Gln His Tyr Ala Arg Pro Ser Tyr Lys Tyr Thr
 545 550 555 560
 Ser Tyr Asp Ala Leu Tyr Arg Thr Pro Arg Gln His Val Gly Gly Cys
 565 570 575
 Leu Trp His Ser Phe Asp His Gln Arg Gly Tyr His Pro Asp Pro Phe
 580 585 590
 Tyr Gly Gly Val Met Asp Val Phe Arg Gln Pro Lys Tyr Ser Tyr Tyr
 595 600 605
 Met Phe Met Ala Gln Arg Ser Pro Ile Lys Glu Glu Arg Leu Phe Gln
 610 615 620
 Thr Gly Pro Met Val Tyr Ile Ala His Glu Met Thr Pro Phe Ser Gly
 625 630 635 640
 Lys Asp Val Thr Val Tyr Ser Asn Cys Asp Glu Val Arg Leu Thr Tyr
 645 650 655
 Leu Lys Gly Gly Gln Thr Gln Thr Tyr Val His Lys Gln Glu Lys Glu
 660 665 670
 Gly Met Pro His Pro Val Ile Thr Phe Glu Asn Val Tyr Asp Phe Met
 675 680 685
 Lys Asp Lys Ala Leu Ser Arg Gln Gly Lys Gln Ala Asp Val Tyr Leu
 690 695 700
 Leu Ala Glu Gly Leu Ile Asp Gly Lys Val Val Ala Thr His Lys Val
 705 710 715 720
 Ala Pro Ala Arg Arg Pro Glu Lys Leu Leu Trp Val Asp Asn Glu
 725 730 735
 Gly Thr Asp Leu Lys Ala Asp Gly Ser Asp Phe Val Thr Val Ile Ala
 740 745 750
 Ala Val Ala Asp Lys Asp Gly Asn Ile Lys Arg Leu Asn Asn Tyr Thr
 755 760 765
 Ile Lys Phe Gln Ile Glu Gly Glu Gly Arg Ile Leu Gly Gly Ala Gly
 770 775 780
 Asn Leu Ala Asn Pro Ala Pro Val Arg Trp Gly Thr Ala Pro Ile Leu

785		790		795		800									
Val	Gln	Ser	Thr	Leu	Lys	Pro	Gly	Lys	Ile	Lys	Ile	Thr	Ala	Ser	Val
				805					810					815	
Leu	Phe	Glu	Gly	Ser	Gln	Met	Pro	Ser	Ser	Ala	Val	Leu	Glu	Leu	Glu
			820					825					830		
Ser	Lys	Pro	Gly	Asp	Phe	Pro	Gln	Ile	Tyr	Asp	Arg	Glu	Glu	Ser	Ala
		835					840					845			
Leu	Ile	Pro	Asn	Phe	Thr	Gly	Gln	Glu	Ala	Val	Asn	Ala	Leu	Ala	Pro
	850					855					860				
Lys	Ser	Glu	Ala	Ala	Leu	Glu	Lys	Glu	Arg	Leu	Gln	Lys	Ala	Glu	Asn
865					870					875					880
Ala	Ala	Lys	Leu	Lys	Glu	Val	Glu	Gln	Gln	Gln	Glu	Glu	Phe	Gly	Glu
				885				890						895	
Lys	Lys														

<210> 7620
 <211> 418
 <212> PRT
 <213> B.fragilis

<400> 7620

Ser	Lys	Gln	Met	Asn	His	Lys	Gly	Pro	Tyr	Met	Arg	Lys	Asn	Ile	Thr
1				5					10					15	
Ile	Gly	Thr	Thr	Leu	Arg	Arg	Ile	Ser	Leu	Ile	Leu	Phe	Cys	Leu	Leu
			20					25					30		
Pro	Leu	Lys	Gly	Ile	Cys	Gln	Thr	Gly	Glu	Ala	Thr	Val	Asp	Ala	Leu
		35					40					45			
Val	Lys	Met	Gly	Phe	Glu	Asn	Val	Gly	Trp	Thr	Glu	Asp	Thr	Glu	Glu
	50					55				60					
Arg	Val	Phe	Val	Ile	Gln	Asn	Ser	Ala	Tyr	Arg	Leu	Glu	Gly	Val	Gly
65					70				75						80
Ile	Gly	Lys	Ala	Val	Asp	Leu	Ile	Gln	Lys	Met	Gly	Leu	Pro	Glu	Asn
				85				90						95	
Lys	Pro	Cys	Arg	Leu	Ile	Val	Leu	Asp	Asn	Asn	Val	Pro	Gln	Ile	Ser
			100					105					110		
Leu	Tyr	Tyr	Gln	Pro	Met	Lys	Gly	Asp	Ser	Ile	Ala	Glu	Val	Ser	Arg
	115						120					125			
Ala	Asp	Trp	Ser	Val	Ser	Tyr	Asp	Leu	Gly	Glu	Gly	Trp	Lys	Gln	Ala
	130						135				140				
Arg	Arg	Ile	Lys	Lys	Gln	Asn	Ser	Ser	Leu	Phe	Lys	Val	Asp	Ile	Val
145					150				155						160
Val	Tyr	Pro	Glu	Leu	Leu	Phe	Arg	Asn	Tyr	Ile	Leu	Ser	Lys	Val	Tyr
				165				170						175	
Glu	Ile	Val	Val	Asn	Val	Ser	Pro	Ala	Ile	Glu	Val	Ser	Leu	Trp	Lys
			180					185					190		
Gly	Met	Lys	Leu	Thr	Gly	Gln	Val	Ile	Phe	Pro	Ile	Tyr	Asn	Asp	Tyr
	195						200					205			
Gly	Gln	Arg	Tyr	Lys	Gln	Ile	Arg	Pro	Gly	Phe	Val	Thr	Leu	Ser	Gln
	210					215					220				
Thr	Val	Arg	Leu	Pro	Gln	Arg	Thr	Phe	Leu	Thr	Ala	Ser	Val	Gly	Phe
225					230					235					240
Phe	Asn	Lys	Phe	Arg	Trp	Gly	Gly	Asp	Leu	Lys	Ala	Lys	His	Phe	Phe
				245				250						255	
Lys	Asp	Glu	Arg	Phe	Ser	Val	Asp	Ala	Arg	Ile	Gly	Tyr	Thr	Gly	Arg
			260					265					270		
Gly	Tyr	Phe	Glu	Asp	Trp	Ala	Phe	Tyr	His	Gly	Thr	Lys	Trp	Thr	Leu
	275						280					285			
Thr	Gly	Ser	Ile	Gly	Ala	Asn	Phe	Tyr	Trp	Pro	Lys	Tyr	Asn	Thr	Gln

290		295		300
Phe Ser Leu Lys Gly	Glu Arg Tyr Leu Glu Gly	Glu Tyr Gly Ala Arg		
305	310	315	320	
Phe Asp Met Ile Arg	His Phe Arg Tyr Ala Ser Ile Gly	Phe Tyr Gly		
	325	330	335	
Met Lys Val Gln His	Ala Gly Asn Lys Gly Leu Asn Gly	Gly Phe Leu		
	340	345	350	
Phe Gln Ile Ala Leu	Pro Pro Tyr Lys Tyr Lys Arg Lys	Gly Tyr Ile		
	355	360	365	
Pro Arg Val Ile Pro	Asn Asn Phe Gly Phe Gln Tyr Asn	Ala Gly Asn		
	370	375	380	
Glu Arg Ile Tyr Gly	Lys Gly Tyr Ser Pro Gln Ala Ser	Asp Asn Val		
385	390	395	400	
Met Glu Asn Asn Ser	Phe Asn Pro Tyr Phe Ile Lys Ser	Glu Leu Leu		
	405	410	415	
Asn Phe				

<210> 7621
 <211> 253
 <212> PRT
 <213> B.fragilis

<400> 7621

Lys Leu Gln Ile Met	Met Lys Lys Ile Phe Leu Ile Gly	Leu Phe Leu
1	5	10
Cys Cys His Leu Ala	Leu Ser Ala Gln Leu Thr Tyr Gly	Thr Thr Gly
	20	25
Leu Leu His Ala Pro	Ser Ala Glu Met Gln Arg Asp Lys	Thr Val Met
	35	40
Ile Gly Gly Asn Phe	Leu Asn Lys Glu Ile Thr Pro Pro	Thr Trp Asp
	50	55
Tyr His Thr Tyr Asn	Tyr Phe Leu Asn Val Thr Ile Phe	Pro Trp Leu
65	70	75
Glu Ile Ala Tyr Thr	Cys Thr Leu Phe Gln Ser Gln Thr	Ile Gly Ile
	85	90
Asp Trp Lys Val Gly	Lys Lys Lys Phe Thr Asn Gln Asp	Arg Tyr Phe
	100	105
Ser Ala Arg Leu Arg	Val Leu Lys Glu Gly Gln Leu Trp	Lys Tyr Met
	115	120
Pro Ala Val Val Val	Gly Thr Ser Asp Pro Tyr Thr	Glu Ser Gly Asp
	130	135
Gly Gln Val Gly Ser	Ala Asp Gly Asn Gly Tyr Phe Cys	Arg Phe Tyr
145	150	155
Val Ala Ala Thr Lys	His Ile Pro Ile Gly Lys Glu Lys	Ile Gly Val
	165	170
His Leu Ser Tyr Leu	Tyr Asn Arg Arg Val Asp Tyr His	Leu Asn Gly
	180	185
Leu Ala Gly Gly Leu	Thr Tyr Ala Pro Ser Phe Ala Pro	Asp Leu Thr
	195	200
Val Ile Ala Glu Tyr	Asp Ala Lys Asp Phe Ala Phe	Gly Ala Thr Tyr
	210	215
Leu Leu Phe Asn His	Leu His Ala Gln Val Glu Leu Gln	Arg Met Lys
225	230	235
Tyr Phe Thr Gly Gly	Leu Thr Tyr Lys Ile Tyr Leu Lys	
	245	250

<210> 7622
 <211> 73

<212> PRT

<213> B.fragilis

<400> 7622

Lys	Gln	Lys	Ile	Met	Lys	Gly	Leu	Asn	Val	Leu	Ala	Ala	Phe	Leu	Gly
1				5					10					15	
Gly	Ala	Ala	Val	Gly	Ala	Ala	Leu	Gly	Ile	Leu	Phe	Ala	Pro	Glu	Lys
			20					25					30		
Gly	Glu	Asp	Thr	Arg	His	Lys	Ile	Ala	Glu	Ile	Leu	Arg	Lys	Lys	Gly
		35					40					45			
Ile	Lys	Leu	Asn	Arg	Asn	Glu	Met	Glu	Asn	Leu	Val	Asp	Glu	Ile	Ala
	50					55					60				
Ala	Glu	Ile	Lys	Gly	Glu	Val	Ile	Asp							
65						70									

<210> 7623

<211> 138

<212> PRT

<213> B.fragilis

<400> 7623

Val	Phe	Glu	Ile	Gln	Asn	Val	Leu	Met	Gln	Gln	Pro	Ala	Arg	Met	Leu
1				5					10					15	
Leu	His	Gln	Glu	Asp	Leu	Leu	Ile	Leu	Val	Gln	Val	Val	His	Val	Val
			20					25					30		
Ala	Leu	Val	Ile	Ile	Val	Thr	Phe	Ile	Arg	Ile	Val	Leu	Gln	Thr	Leu
		35					40					45			
Glu	His	Ile	Gln	Glu	Val	Leu	Val	Gly	Leu	Leu	Leu	Leu	Ile	Leu	Val
	50					55					60				
Glu	Val	Arg	Gln	Gln	His	Leu	Leu	Val	Leu	Ile	Gln	Met	Lys	Val	Pro
65					70				75					80	
Val	Val	Leu	Met	Ala	Leu	Leu	His	Leu	Leu	Glu	Ala	Ile	Pro	Gln	Val
			85						90				95		
Val	Leu	Leu	Ala	Leu	Val	Val	Val	Ile	Leu	Pro	Val	Ala	Glu	Val	Val
			100					105					110		
Val	Ala	Val	Leu	Val	Arg	Gln	Val	Val	Glu	Val	Ala	Thr	Ala	Glu	Val
		115					120					125			
Ala	Val	Val	Glu	Asp	Lys	Lys	Ile	Val	Asn						
	130					135									

<210> 7624

<211> 390

<212> PRT

<213> B.fragilis

<400> 7624

Leu	Phe	Gly	Val	Pro	Ile	Cys	Leu	Leu	His	Ala	Val	Cys	Arg	His	Ile
1				5					10					15	
Asn	Asn	Glu	His	Ile	Ile	Met	Gly	Leu	Leu	Glu	Phe	Asn	Lys	Leu	Pro
		20						25					30		
Ile	Asn	Thr	Leu	Val	Gly	Ala	Asp	Trp	Arg	Thr	Phe	Lys	Ala	Ile	Thr
		35					40					45			
Gly	Gly	Arg	Glu	Ile	Asp	Ala	Tyr	Thr	Gly	Lys	Tyr	Arg	Leu	Thr	
	50					55				60					
Lys	Ala	Val	Cys	Arg	Leu	Leu	Ser	Thr	Leu	Ala	Pro	Leu	Gln	Asp	Lys
65					70				75					80	
Arg	Tyr	Glu	Lys	Leu	Leu	Ala	Asn	Lys	Pro	Leu	Glu	His	Asp	Pro	Val
			85					90					95		
Phe	Ile	Leu	Gly	His	Trp	Arg	Ser	Gly	Thr	Thr	Phe	Val	His	Asn	Val

[illegible]

<400> 7625

Thr	Ser	Ala	Val	Leu	Thr	Lys	Leu	Lys	Lys	Val	Leu	Ser	Val	Val	Asn
1				5					10					15	
Thr	Thr	Val	Leu	Gln	Pro	Glu	Leu	Val	Phe	Val	Thr	Pro	Met	Glu	Val
		20						25					30		
Lys	Phe	Thr	Pro	Ala	Val	Val	Val	Ala	Gln	Gly	Glu	Thr	Pro	Glu	Val
		35					40					45			
Ala	Leu	Ala	Thr	Leu	Tyr	Phe	Asn	Glu	Lys	Thr	Asn	Thr	Trp	Glu	Ala
	50					55					60				
Glu	Glu	Asn	Tyr	Ala	Thr	Tyr	Gln	Asn	Gly	Val	Phe	Val	Gly	Asn	Val
65					70					75				80	
His	His	Phe	Ser	Lys	Phe	Lys	Phe	Gly	Phe	Glu	Glu	Ala	Asp	Ser	Lys
				85					90					95	
Ala	Thr	Ala	Glu	Ala	Ala	Leu	Asp	Ser	Met	Lys	Phe	Asp	Lys	Ala	Cys
			100					105					110		
Tyr	Thr	Glu	Gly	Glu	Thr	Ala	Lys	Val	Lys	Met	Glu	Ile	Asn	Trp	Lys

115	120	125
Gly Gly Ile Lys Cys Glu Gly Gly Ala Ser Val Glu Glu Ile Ile Lys		
130	135	140
Lys Ala His Ser Thr Leu Thr Thr Thr Thr Ile Lys Met Val Ser Ala		
145	150	155
Ala Leu Glu Glu Ala Ile Lys Asp Asp Asn Ala Asn Val Thr Pro Gly		
	165	170
Ala Ala Phe Thr Asp Lys Lys Phe Thr Tyr Glu Leu Glu Val Pro Ala		
	180	185
Tyr Thr Gln Leu Thr Gly Phe Asp Val Thr Arg Asn Val Ile Lys Thr		
	195	200
Thr Tyr Val Leu Pro Phe Ala Val Tyr Asn Lys Ala Thr Lys Ala Ile		
	210	215
Glu Lys Lys Thr Ala Glu Val Thr Ile Ser Lys Ile Ser Ser Val Val		
225	230	235
Val Arg Thr Ile Glu Ala Ile Gly His Gly His Gly His Gly His Gly		
	245	250
Asp Asp Leu Asn Ala Gly Gly Gly Ile Ile Ile Ser Glu		
	260	265

<210> 7626
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 7626
Ile Ala Leu Val Lys Val Gln Val Phe Ser Tyr Ser Lys Thr Ile Lys
1 5 10 15
Leu Tyr Ile Ile Lys Ser Val Lys Asp Tyr Ser Asn Glu Ile Pro Ser
20 25 30
Lys Thr Gly Phe His Lys Ile Ile Ser Pro Tyr Phe Ser Lys Leu Lys
35 40 45
Phe Lys Tyr Ser Asn Asn Thr Thr Gln Lys Lys Lys Thr Tyr Leu Asn
50 55 60

<210> 7627
 <211> 257
 <212> PRT
 <213> B.fragilis

<400> 7627
Lys Lys Glu Val Met Thr Lys Glu Glu Ile Ile Lys Pro Glu Asn Leu
1 5 10 15
Val Tyr Lys Lys Pro Thr Leu Met Asn Asp Asn Gly Met His Tyr Cys
20 25 30
Pro Gly Cys Ser His Gly Val Val His Lys Leu Ile Ala Glu Val Ile
35 40 45
Glu Glu Met Gly Leu Glu Asp Lys Ala Val Gly Ile Ser Pro Val Gly
50 55 60
Cys Ala Val Phe Ile Tyr Asn Tyr Leu Asp Ile Asp Trp Gln Glu Ala
65 70 75 80
Ala His Gly Arg Ala Pro Ala Leu Ala Thr Ala Ile Lys Arg Leu Trp
85 90 95
Pro Asp Arg Leu Val Phe Thr Tyr Gln Gly Asp Gly Asp Leu Ala Cys
100 105 110
Ile Gly Thr Ala Glu Thr Ile His Ala Leu Asn Arg Gly Glu Asn Ile
115 120 125
Thr Ile Ile Phe Ile Asn Asn Ala Ile Tyr Gly Met Thr Gly Gly Gln
130 135 140

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Met Ala Pro Thr Thr Leu Met Gly Met Lys Thr Ala Thr Cys Pro Tyr
 145 150 155 160
 Gly Arg Asp Pro Glu Leu His Gly Tyr Pro Leu Lys Ile Thr Glu Ile
 165 170 175
 Ala Ala Gln Leu Glu Gly Thr Ala Tyr Val Thr Arg Gln Ser Val Gln
 180 185 190
 Ser Val Pro Ala Ile Arg Lys Ala Lys Lys Ala Ile Arg Lys Ala Phe
 195 200 205
 Glu Asn Ser Met Asn Gly Lys Gly Ser Asn Leu Val Glu Ile Val Ser
 210 215 220
 Thr Cys Ser Ser Gly Trp Lys Met Thr Pro Glu Lys Ala Asn Lys Trp
 225 230 235 240
 Met Glu Glu His Met Phe Pro Phe Tyr Pro Leu Gly Asp Leu Lys Asp
 245 250 255
 Lys

<210> 7628

<211> 410

<212> PRT

<213> B.fragilis

<400> 7628

Lys Ser Phe Phe Met Asp Phe Cys Tyr Leu Phe Val Thr Tyr Asn Arg
 1 5 10 15
 Ile Met Ser Ile Phe Ile Thr Lys Asn Ile Gln Thr Asn Asn Met Lys
 20 25 30
 Lys Glu Val Arg Ile Lys Glu Pro Val Arg Ile Arg Thr Lys Arg Leu
 35 40 45
 Ser Asn Gly Cys Glu Ser Ile Tyr Leu Asp Ile Tyr Met Asp Gly Arg
 50 55 60
 Arg Arg Tyr Glu Phe Leu Lys Leu Tyr Ile Ile Pro Glu His Thr Arg
 65 70 75 80
 Thr Asp Lys Asp Leu Asn Gln Ser Thr Met Lys Leu Ala Ser Ala Val
 85 90 95
 Lys Ala Gln Arg Ile Ile Glu Leu Gln Asn Gly Val Tyr Gly Phe Asn
 100 105 110
 His Gln Gln Glu Lys Lys Asp Ile Met Leu Ile Asp Tyr Ile Lys Tyr
 115 120 125
 Leu Ala Asp Lys Asp Ile Glu Lys Thr Ser Arg Lys Val Ser Met Tyr
 130 135 140
 Thr Leu Ile Tyr His Leu Gln His Tyr Asp Lys Met Gly Ile Arg Leu
 145 150 155 160
 Arg Gln Val Asp Lys Lys Tyr Ile Leu Gly Phe Val Glu Tyr Leu Lys
 165 170 175
 Thr Ala Thr Gln Lys His Cys Lys Ser Val Lys Asn Ile Ser Ala Asn
 180 185 190
 Thr Gln Val His Tyr Tyr Lys Val Phe His His Cys Leu Asn Ser Ala
 195 200 205
 Val Ile Asp Glu Ile Ile Thr Ser Asn Pro Met Asp Lys Ile Lys Asn
 210 215 220
 Glu Glu Lys Pro Lys Arg Arg Arg Thr Glu Arg Ala Phe Leu Thr Ile
 225 230 235 240
 Asp Glu Leu Lys Ile Leu Ser Gln Thr Asp Phe His Asn Ala Thr Leu
 245 250 255
 Lys Lys Ala Phe Leu Phe Ser Cys Phe Cys Gly Leu Arg His Ser Asp
 260 265 270
 Ile Val Ala Leu Thr Trp Gly Asn Leu Lys Lys Gly Lys Val Gly Lys
 275 280 285

Met Glu Leu His Met Thr Gln Gln Lys Thr Gln Glu Ile Leu Ser Leu
 290 295 300
 Pro Leu Ser Lys Glu Ala Leu Lys Gln Leu Pro Val Arg Gly Lys Val
 305 310 315 320
 Pro Asp Thr Glu Lys Val Phe Lys Gly Leu Ile Ser Leu Gly Arg Thr
 325 330 335
 Asn Glu Ile Leu Pro Lys Trp Ala Ala Lys Ala Gly Ile Gln Lys His
 340 345 350
 Ile Thr Phe His Ser Ala Arg His Thr His Ala Thr Met Met Ile Thr
 355 360 365
 Leu Gly Ala Asp Leu Tyr Thr Val Ser Lys Leu Leu Gly His Thr Asn
 370 375 380
 Ile Gln Thr Thr Gln Ile Tyr Ala Lys Ile Val Asp Glu Ser Lys Glu
 385 390 395 400
 Lys Ala Ile Asp Leu Ile Pro Asp Ile Thr
 405 410

<210> 7629
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 7629
 Ile Ala Leu Ser His Asn Tyr Glu Thr Arg Tyr Ile Val Thr Asp Leu
 1 5 10 15
 Thr Val Asn Ser Ile Gln Glu Phe Lys Asn Gly Tyr Ile Ile Lys Arg
 20 25 30
 Ala Asp Thr Ser Tyr Leu Asn Ser Lys Leu Arg Asn Glu Lys Ile Arg
 35 40 45
 Ser Asp Thr Ile Arg Ile Arg Leu Ser Phe Val Arg Ala Ile Met Arg
 50 55 60
 Phe Thr Leu Gln Cys Arg Phe Ile Thr Tyr Val Thr Tyr Pro Phe Ala
 65 70 75 80
 Ser Tyr Lys

<210> 7630
 <211> 283
 <212> PRT
 <213> B.fragilis

<400> 7630
 His Met Asp Ser Phe Phe Gln Thr Leu Ala Phe Thr Tyr Leu Leu Tyr
 1 5 10 15
 Pro Ile Leu Gly Leu Leu Leu Val Gly Leu Gly Ile Phe Ile Ala Lys
 20 25 30
 Lys Asn Ala Leu Leu Asn Asn Lys Arg Leu Val Gly Tyr Thr Ile Gly
 35 40 45
 Ala Ile Val Leu Leu Thr Leu Pro Ala Leu Leu Gly Phe Leu Asp Tyr
 50 55 60
 Gly Phe Met Pro Tyr Gly Tyr Ile Phe Leu Ala Met Leu Tyr Leu Leu
 65 70 75 80
 Leu Gly Gly Tyr Asn Ile Arg Met Ile Ala Trp Val Tyr Lys Asp Asp
 85 90 95
 Tyr Lys Tyr Arg His Glu Ile Ile Leu Thr Gly Phe Ile Leu Val Val
 100 105 110
 Ser Met Leu Phe Phe Thr Leu Val Phe Asn Leu Cys Asn Glu Leu Lys
 115 120 125
 Tyr Gly Leu Trp Ala Ser Ala Cys Leu Leu Pro Phe Val Ile Val Ser

130	135	140
Val Phe Ile Arg Thr Tyr	Arg Ile Phe Ile Ala	Ile Pro Ile Pro Val
145	150	155
Tyr Glu Val Trp Arg Tyr Thr	Asp Asp Thr Glu Gln	Asp Gly Tyr Phe
165	170	175
Asp Pro Gly Ser Leu Gln Val	Leu Gln Ile Glu Leu Tyr	Lys Gln Glu
180	185	190
Ser Asp Arg Glu Pro Val Lys	Leu Ser Val Lys Ala	Pro Asp Glu Met
195	200	205
Gln Phe Gly Thr Trp Phe His	Arg Met Ile Asp Asp	Tyr Asn Leu Lys
210	215	220
Ser Pro Gln Ala Pro Ile Asp	Asp Tyr Ala Ala Lys	Glu Gly Gly Trp
225	230	235
Ile Phe Tyr Arg Lys Pro Thr	Leu Leu Ser Pro Arg	His Tyr Ile Asp
245	250	255
Phe Asn Leu Thr Val Lys Asp	Asn Arg Ile Arg Ser	Arg Asp Val Ile
260	265	270
Val Ala Lys Arg Val Met Glu	His Asn Glu Asn	
275	280	

<210> 7631
 <211> 188
 <212> PRT
 <213> B.fragilis

<400> 7631

Ala Glu Arg Leu Arg Ser Pro Arg Lys Trp Ala Gln Glu Pro His Ser	
1 5 10 15	
Pro Ser Gly Cys Leu Leu Arg Met Ser Tyr Lys Ile Arg Lys Arg Glu	
20 25 30	
Arg Thr Ala Thr Cys Pro Gly Glu Ala Val Gly Thr Gln Pro Ser Glu	
35 40 45	
Val Leu Pro Ala Lys Glu Glu Thr Thr Glu Lys Glu Glu Asp Leu Arg	
50 55 60	
Ala Thr Ala Ala Gly Thr Glu Lys Ala Thr Ile Leu Ile Ala Glu Asp	
65 70 75 80	
Thr Asp Ser Asn Phe Asp Leu Leu Asn Ala Ile Leu Gly Arg Lys Tyr	
85 90 95	
Arg Leu Val Arg Ala Arg Asp Gly Met Glu Ala Val Thr Met Tyr Asp	
100 105 110	
Glu Val Asn Pro Asp Leu Ile Leu Met Asp Ile Lys Met Pro Asn Leu	
115 120 125	
Asp Gly Leu Glu Ala Thr Arg Ile Ile Arg Gln Leu Ser Ala Glu Val	
130 135 140	
Pro Ile Ile Ala Gln Ser Ala Tyr Ala Tyr Glu His Asp Arg Asn Ala	
145 150 155 160	
Ala Glu Glu Ala Gly Cys Asn Asp Phe Ile Ser Lys Pro Ile Ala Gln	
165 170 175	
Glu Lys Leu Lys Glu Lys Ile Lys Lys Trp Leu Lys	
180 185	

<210> 7632
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 7632

Ser Asn Leu Leu Val Ile Cys Gly Asn Gly Lys Leu Val Tyr Leu Trp
1 5 10 15

Arg Lys Met Glu Leu Asp Asn Val Leu Arg Ala Asp Cys Tyr Asp Thr
 20 25 30
 Glu Glu Glu Lys Lys Leu Ser Pro Asp Met Arg Thr Val Ser Ala Ser
 35 40 45
 Lys Phe Ile Ala Leu Tyr Met Pro Lys Asp Ser Asn Lys Leu Met Glu
 50 55 60
 Leu Tyr
 65

<210> 7633

<211> 742

<212> PRT

<213> B.fragilis

<400> 7633

Lys Leu Cys Pro Met Asp Tyr Val Leu Tyr Leu Leu Arg Ala Leu Tyr
 1 5 10 15
 Arg Val Lys Trp Trp Ile Leu Leu Gly Thr Ala Leu Ile Thr Ala Ile
 20 25 30
 Val Tyr Phe Arg Thr Gly Asn Leu Arg Gly Gly Tyr Asn Val Glu Ala
 35 40 45
 Thr Leu Tyr Thr Gly Val Val Ser Gly Tyr Gly Val Glu Glu Ser Thr
 50 55 60
 Lys Val Asp Trp Ala Leu Ala Gln Asn Ser Met Asp Asn Leu Ile Asn
 65 70 75 80
 Ile Ile Gln Ala Glu Ser Thr Leu Lys Arg Val Ser Leu Arg Leu Phe
 85 90 95
 Ser Arg Ile Leu Val Lys Gly Ser Pro Asp Lys Asp Asn Glu Gly Ile
 100 105 110
 Thr Ala Ala Ser Tyr Asn Tyr Thr Tyr Asn His Met Lys Asn Ser Pro
 115 120 125
 Asp Gly Lys Ala Leu Ile Ala Leu Ile Asp Arg Thr Ser Glu Asp Lys
 130 135 140
 Thr Met Glu Asn Phe Gln Lys Tyr Glu Arg Gln Asp Lys Asn Asn Tyr
 145 150 155 160
 Ile Tyr Gly Leu Phe Tyr Phe Gln His Val Tyr Tyr Ser Tyr Gln Ala
 165 170 175
 Leu Lys Asn Ile Lys Val Glu Arg Lys Gly Ser Ser Asp Leu Leu Lys
 180 185 190
 Val Ser Tyr Gln Ser Gly Asp Pro Gly Ile Ala Tyr Asn Thr Ile Glu
 195 200 205
 Ile Leu Met Lys Glu Phe Val Asn Glu Tyr Gln Ala Leu Arg Tyr Glu
 210 215 220
 Gly Thr Asp Lys Val Ile Glu Tyr Phe Lys Ala Glu Leu Lys Arg Ile
 225 230 235 240
 Gly Gly Asp Leu Thr Lys Tyr Glu Asp Asp Leu Thr Gln Tyr Asn Val
 245 250 255
 Glu Asn Arg Ile Ile Asn Tyr Tyr Asp Glu Thr Lys Glu Ile Ala Ala
 260 265 270
 Ile Asn Lys Glu Phe Glu Leu Arg Glu Gln Asn Val Leu Phe Glu Tyr
 275 280 285
 Asn Ser Ser Arg Ala Met Leu Glu Glu Leu Glu Arg Gln Met Asp Ala
 290 295 300
 Asn Ser Lys Arg Ile Ile His Asn Val Glu Leu Val Asp Lys Leu Lys
 305 310 315 320
 Gln Ala Thr Asn Leu Thr Gly Lys Ile Ile Glu Met Glu Thr Ile Ser
 325 330 335
 Thr Ala Gly Asp Ser Thr Gly Met Lys Leu Thr Glu Tyr Lys Asn Arg
 340 345 350

Leu Ile Gln Ser Arg Arg Asp Leu Ser Thr Ile Ala Asn Gln Tyr Val
 355 360 365
 Ala Gly Gln Gln Thr Lys Glu Gly Val Ala Lys Ala Thr Ile Val Glu
 370 375 380
 Gln Trp Leu Asp Gln Leu Leu Leu Phe Glu Lys Ala Lys Ala Glu Leu
 385 390 395 400
 Lys Ile Val Gln Arg Ser Arg Ser Asp Leu Asn Ala Lys Tyr Thr His
 405 410 415
 Phe Ala Pro Val Gly Thr Thr Ile Lys Arg Lys Glu Arg Thr Ile Ser
 420 425 430
 Phe Thr Glu Gln Asn Tyr Leu Thr Asn Leu Lys Ser Tyr Asn Asp Ala
 435 440 445
 Leu Leu Arg Lys Lys Asn Leu Glu Met Thr Ala Ala Ile Leu Lys Val
 450 455 460
 Leu Asn Pro Pro Ala Tyr Pro Ile Asn Glu Glu Val Ala Ser Arg Lys
 465 470 475 480
 Lys Ile Val Met Met Ala Ala Ala Gly Ser Phe Ile Phe Phe Val Ala
 485 490 495
 Leu Phe Leu Leu Ile Glu Ala Ile Asp Arg Thr Leu Arg Asp Ser Thr
 500 505 510
 Arg Thr Arg Lys Gln Thr Gly Ser Ile Val Leu Gly Ala Tyr Pro Ala
 515 520 525
 Pro Leu Lys Leu Ser Pro Ile Ser Lys Gln Cys Glu Glu Ile Ala Thr
 530 535 540
 Arg Tyr Met Ser Ser Ala Ile Leu Arg Phe Phe Thr Glu Arg Lys Glu
 545 550 555 560
 Gly Met Pro Phe Ile Leu Asn Leu Leu Ser Thr Glu Gln Gly Ser Gly
 565 570 575
 Lys Thr Tyr Leu Ala Glu Gln Leu Gln Gly Tyr Trp Glu Ser Ile Gly
 580 585 590
 Leu Lys Val Arg Arg Leu Thr Asp Gly Thr Asp Phe Asn Ser Asn Ser
 595 600 605
 Ser Ala Phe Thr Leu Ala Lys Asn Leu Thr Asp Leu Tyr Thr Pro Gly
 610 615 620
 Thr Glu Asp Ile Leu Ile Val Glu Tyr Pro Ser Leu Glu Lys Ala Asn
 625 630 635 640
 Ile Pro Thr Pro Leu Leu Gln Asp Ala Gln Leu Asn Leu Leu Val Ala
 645 650 655
 Ser Ala Val His Gly Trp Lys Ala Thr Asp Lys Val Leu Leu Gln Lys
 660 665 670
 Leu Lys Ser Gln Leu Gly Thr Ser Pro Tyr Leu Tyr Leu Asn Arg Ala
 675 680 685
 Pro Lys Tyr Glu Val Glu Thr Tyr Thr Gly Met Leu Pro Pro Tyr Thr
 690 695 700
 Phe Val His Lys Gln Met Tyr Arg Leu Ser Gln Leu Ala Leu Thr Glu
 705 710 715 720
 Ser Leu Phe Asn Trp Lys Lys Asn Ser Arg Lys Lys Pro Gln Asp Ile
 725 730 735
 Asp Asp Asp Asp Asp Glu
 740

<210> 7634

<211> 312

<212> PRT

<213> B.fragilis

<400> 7634

Met Val Thr Thr Arg Ile Leu Lys Ile Pro Phe His Pro Lys Ala Ile
 1 5 10 15

His Gly Ile Tyr Gly Val Asn Tyr Tyr Phe His Lys Lys Asp Ala Leu
 20 25 30
 Pro Gln Arg Leu Gln Phe Glu Ala Thr Val Glu Tyr Cys Gly Gln Tyr
 35 40 45
 Met Asp Glu Tyr Ser Ile Tyr His Ile Ser Lys Lys Glu Tyr Val Val
 50 55 60
 Asn Arg Asn Glu Thr Asp Glu Tyr Leu Tyr Asp Ile Ala Lys Lys Cys
 65 70 75 80
 Ala Asp Ile Ile Tyr Pro Ile Thr Val Leu Asp Arg Asn Gly His
 85 90 95
 Pro Val Phe Ile Arg Thr Asp Asp Ile Val Glu Arg Trp Ser Glu Lys
 100 105 110
 Arg His Glu Leu Asp Arg Tyr Tyr Lys Gly Asp Thr Ala Glu Tyr Tyr
 115 120 125
 Leu Ser Lys Val Glu Glu Ala Val Asn Asp Pro Val Lys Met Met Gln
 130 135 140
 Leu Ile Ser Asn Asp Leu Phe Phe Ser Gln Leu Phe Thr Phe Gln Tyr
 145 150 155 160
 Tyr Asn Thr Val Lys Phe Glu Asn Asp Ile Met Leu Ile Pro Phe Ser
 165 170 175
 Ile Pro Leu Arg Phe Ser Ser Ile Gln Glu Met Asp Ile Asp Ser Phe
 180 185 190
 Ser Asp Ser Glu Ser Asp Thr Ile His Ile Ile His Lys Gly Ser Thr
 195 200 205
 Lys Asn Gln Tyr Lys Asn Gly Asp Phe Tyr Gly Ser Ser Glu Met Asn
 210 215 220
 Ala Ser Gln Tyr Asn Ala Ile Leu Ser Ala Lys Tyr Arg Ile Arg Tyr
 225 230 235 240
 Ser Leu Gly Lys Glu Arg His Asp Phe Glu Ala Ile Glu Gly Asp Phe
 245 250 255
 Val Val Ser Lys Glu Glu Glu Asp Val Asn Ser Ile Lys Met Glu Ala
 260 265 270
 Tyr Lys Leu Asp Glu Lys Val Leu Glu Tyr Gly Phe Asp Lys Glu Leu
 275 280 285
 Glu Lys Arg Glu Arg Glu Gln Lys Arg Ile Asp Asn Ser Leu Met Asn
 290 295 300
 Lys Leu Lys Arg Tyr Phe Lys Thr
 305 310

<210> 7635

<211> 156

<212> PRT

<213> B.fragilis

<400> 7635

Asn Asp Asn Thr Met Ala Ile Tyr Ser Leu His Glu Met Ala Gly Leu
 1 5 10 15
 Leu Lys Thr Gly Leu Trp Gln Gly Gly Glu Val Glu Lys Leu Gly Tyr
 20 25 30
 Ile Gly Thr Ala Val Pro His Ala Ser Pro Ala Pro Ala Cys Gly Leu
 35 40 45
 Thr Gly Val Tyr Ile Ser Tyr Asp Thr Met Leu Glu Arg Cys Glu Val
 50 55 60
 Ser Met Gln Gly Gly Gly Cys Glu Leu Phe Ile Ser Gln Tyr His Pro
 65 70 75 80
 Tyr Thr Gly Thr Tyr Met Thr Tyr Val Leu Glu Ser Asn Leu Ser Asp
 85 90 95
 Arg Arg Leu Leu Leu Ala Lys Leu Glu Glu Ile Leu Ala Asp Arg Arg
 100 105 110

Asn	Pro	Tyr	Leu	Trp	Ser	His	Asn	Leu	Tyr	Lys	Arg	Asn	Ser	Phe	Gly
	115						120					125			
Ile	Glu	Arg	Arg	Tyr	Asp	Thr	Gly	His	Ser	Ser	Met	Trp	Gly	Gly	Arg
	130					135					140				
Ile	Ala	Val	Pro	Arg	Gln	Ser	Lys	Phe	Phe	Gly	Arg				
145					150					155					

<210> 7636

<211> 428

<212> PRT

<213> B.fragilis

<400> 7636

Arg	Ile	Asn	Thr	Lys	Met	Lys	Glu	Asn	Ile	Ser	Arg	Phe	Lys	Ile	Asp
1				5					10					15	
Tyr	Ser	Val	Cys	Lys	Asn	Ser	Pro	Gly	Gly	Ser	Ile	Leu	Glu	Lys	Val
		20						25					30		
Ser	Asn	Phe	Gln	Lys	Glu	Leu	Gln	Leu	His	Glu	Glu	Asn	Ser	Leu	His
		35					40					45			
Ile	Tyr	Val	Lys	Ser	Pro	Met	Val	Ser	Gly	Cys	Gly	Arg	Glu	Val	Glu
	50					55					60				
Val	Val	Asp	Arg	Lys	Thr	Asn	Glu	Val	Lys	Lys	Met	Leu	Met	Phe	Gly
65					70					75					80
Ser	Asn	Ser	Tyr	Leu	Asp	Ala	Thr	Gly	Ile	Pro	Ser	Val	Val	Glu	Lys
				85					90					95	
Ala	Val	Arg	Val	Ile	Thr	Asp	Tyr	Gly	Val	Gly	Ser	Gly	Gly	Val	Pro
			100					105					110		
Leu	Leu	Ser	Gly	Thr	Thr	Ile	Phe	Gln	Asn	Glu	Leu	Glu	Lys	Glu	Ile
		115					120					125			
Ala	Lys	Leu	Thr	Gly	Phe	Asp	Asp	Thr	Ile	Leu	Phe	Ser	Ser	Gly	Phe
	130					135					140				
Thr	Ala	Asn	Ile	Gly	Val	Ile	Val	Gly	Leu	Ile	Arg	Pro	Asn	Asn	Leu
145					150					155					160
Leu	Val	Tyr	Asp	Arg	Leu	Asn	His	Ala	Ser	Leu	Ile	Asp	Gly	Ala	Leu
				165				170						175	
Met	Ser	Gly	Ala	Lys	Met	Val	Arg	Tyr	Lys	His	Asn	Asp	Pro	Lys	Ala
			180					185					190		
Leu	Glu	Lys	Ile	Leu	Lys	Glu	Asn	Ala	Gly	Gln	Tyr	Lys	Asp	Gly	Met
	195						200					205			
Met	Val	Val	Thr	Asp	Gly	Val	Phe	Ser	Met	Asp	Gly	Asp	Ile	Ala	Asp
	210					215					220				
Ile	Pro	Ala	Ile	Leu	Glu	Ile	Thr	Lys	Lys	Tyr	Asn	Ala	Leu	Leu	Leu
225					230					235					240
Ile	Asp	Asp	Ala	His	Ala	Thr	Gly	Val	Ile	Gly	Gly	Asp	Gly	Ala	Gly
				245					250					255	
Thr	Leu	Ser	Tyr	Tyr	Asp	Ile	Lys	Glu	Arg	Glu	Asn	Ile	Ile	Val	Thr
			260					265					270		
Gly	Thr	Leu	Ser	Lys	Ala	Ile	Gly	Ser	Ile	Gly	Gly	Phe	Ile	Thr	Ala
		275					280					285			
Lys	Gln	Asn	Ile	Ile	Asp	Tyr	Leu	Arg	Val	Tyr	Ala	Arg	Ser	Asn	Met
	290					295					300				
Tyr	Ser	Thr	Ser	Leu	Pro	Gln	Ser	Ile	Cys	Ala	Ala	Ser	Leu	Glu	Val
305					310					315					320
Ile	Lys	Glu	Met	Arg	Asn	Thr	Asp	Ile	Gln	Asn	Ala	Leu	Lys	Arg	Asn
				325					330					335	
Ala	Glu	Tyr	Val	Arg	Asn	Gly	Leu	Lys	Ala	Leu	Gly	Phe	Asn	Thr	Leu
			340					345					350		
Asn	Ser	Met	Thr	Pro	Ile	Ile	Pro	Val	Ile	Val	Gly	Asp	Glu	Tyr	Ile
		355					360					365			

113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Leu Thr Gln Ile Thr Lys Glu Leu Tyr Asp Arg Asp Ile Phe Thr Asn
 370 375 380
 Ala Ile Phe Pro Pro Val Val Pro Pro Asn Met Cys Arg Ile Arg Ile
 385 390 395 400
 Gly Val Met Ser Ser His Thr Phe Glu Asp Cys Asp Arg Leu Ile Asn
 405 410 415
 Ala Phe His Glu Ile Gly Lys Lys Tyr Gly Leu Ile
 420 425

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 <212> PRT
 <213> B.fragilis

<400> 7637
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 1 5 10 15
 Leu Gly Asp Ser Ser Ile Ser Gly Leu Tyr Lys Asp Ser Tyr Glu Leu
 20 25 30
 Glu Asn Cys His Phe Ser Phe Asn Gln Gly Thr Asn Thr Asp Gly Lys
 35 40 45
 Pro Gln Thr Asp Val Arg Gly Gly Thr Leu Tyr Leu Thr Tyr Ala Gly
 50 55 60
 Leu Pro Gln Asp Asp Met Leu Arg Trp Ile Leu Asn Pro Lys Lys Tyr
 65 70 75 80
 Glu Asp Gly Ala Ile Val Ile Cys Asp Asp Ser Asp Glu Pro Leu Glu
 85 90 95
 Lys Ile Leu Phe Glu Gln Ala Ala Cys Thr Gly Leu Asn Ile Glu Tyr
 100 105 110
 Thr Gln Lys Gly Lys Ala Tyr Ile His Thr Lys Ile Ile Leu Gln Ala
 115 120 125
 Arg Lys Ile Lys Val Gly Glu Thr Thr Phe Glu Asn Arg Trp Thr Ile
 130 135 140
 Asn Glu
 145

<210> 7638
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 <212> PRT
 <213> B.fragilis

<400> 7638
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 1 5 10 15
 Ile Lys Val Ala Gly Lys Val Cys Asp Tyr Val Thr Met Glu Leu Phe
 20 25 30
 Gln Ser Val Ser Thr His His Arg Phe Lys Ile Lys Val Asn Tyr Arg
 35 40 45
 Pro Asp Lys Pro Ser Val Trp Ala Ile Gly Pro Asp Val Ile Phe Lys
 50 55 60
 Gln Leu Gly Glu Lys Val Ser Ile Ile Met Thr His His Glu Ser Gly
 65 70 75 80
 Glu Lys Thr Glu Phe His Gly Leu Ile Ser Asp Ile His Val Glu Gly
 85 90 95
 Phe Asp Gly Asn Gln Gly Phe Val Ile Leu Glu Gly Gly Ser Pro Thr
 100 105 110
 Ile Leu Leu Asp Arg Asp Pro Ala Met Asp Cys Tyr Val Glu Gln Asn
 115 120 125
 Leu Asn Thr Ile Val Ser Asp Ile Leu Asp Lys Ser Gly Val Lys Met

130	135	140
Asn Val Thr Asn Asn Pro Lys His Thr Asp Ile Ile Pro Tyr Val Ala		
145	150	155
Arg Tyr Lys Glu Thr Ser Tyr Gly Phe Leu Ser Arg Leu Leu Arg Ser		160
	165	170
Tyr Gly Glu Trp Phe Tyr Tyr Asn Gly Glu Thr Leu Gln Ile Gly Asp		175
	180	185
Pro Glu Ile Glu Thr Glu Ser Arg Ala Gly Tyr Asp Val Asp Leu Thr		190
	195	200
Gly Val Ser Ile Asn Ala Thr Ile Arg Ser Leu Asn His Ser Thr Tyr		205
	210	215
Glu Phe Asp Pro Val Asn Asp Lys Phe Tyr Tyr Asp Tyr Ser Gly Thr		220
225	230	235
Pro Lys Gly Ala Thr Leu Gly Ser Arg Ser Ala Glu Lys Cys Ser Glu		240
	245	250
Pro Ile Phe Pro Thr Glu Ala Lys Leu Pro Ser Ile Arg Pro Ala Tyr		255
	260	265
Ser Ala Met Asp Leu Glu His Tyr Gly Asp Ala Gly Phe His Arg Asn		270
	275	280
Tyr Ser Gln Leu Ser Gln Ile Lys Ala Ser Ser Arg Tyr Cys Gly Ile		285
	290	295
Arg Leu Gly Glu Leu Val Val Thr Arg Val Pro Glu Ser Phe Pro Gly		300
305	310	315
Val Lys Ile Thr Asp Leu Gly Arg Tyr Arg Ile Thr Glu Ile Thr His		320
	325	330
Thr Val Asp Ser Arg Gly Arg Tyr Ser Asn Thr Phe Cys Gly Val Pro		335
	340	345
Gly Gly Thr Pro Val Met Pro Trp Gly Asp Ala Val Met Pro Val Ala		350
	355	360
Tyr Pro Glu Met Ala Arg Val Val Ser Asn Asp Asp Pro Lys Asn Gln		365
	370	375
Gly Arg Val Lys Val Gln Phe Met Trp Gln Glu Val Asp Gly Gly Glu		380
385	390	395
Ser Tyr Trp Met Arg Val Gln Ser Pro Asp Ala Gly Lys Ser Asp Lys		400
	405	410
Val Ala Lys Asn Arg Gly Phe Val Phe Ile Pro Glu Pro Gly Asp Leu		415
	420	425
Val Met Val Gly Phe Glu Gln Gly Asn Pro Asp Arg Pro Tyr Val Thr		430
	435	440
Gly Ser Leu Phe Tyr Lys Ala Asn Ser Glu Gly Ala Ala Thr Asp Asn		445
	450	455
Ser Val Lys Ser Ile Arg Thr Arg Ser Gly His Ile Leu Glu Phe Asn		460
465	470	475
Asp Asp Glu Gly Gly Asp Trp Gly Ile Thr Ile Lys Asp Arg Asn Gly		480
	485	490
Cys Met Phe His Leu Asp Thr Lys Gly Glu Glu Ile Leu Ile Ser Ala		495
	500	505
Pro Gln Lys Ile Thr Ile Asp Ala Lys Asp Ile Val Ile Ser Ala Asn		510
	515	520
Asn Gln Ile Asn Met Val Ala Asp Lys Gly Ile Leu Ala Asn Gly Arg		525
	530	535
Glu Asn Ile Ser Phe Val Thr Lys Thr Met Gln Thr Asp Val Glu Asn		540
545	550	555
Asp Cys Val Leu Ser Ala Lys Glu Phe Thr Gly Ile Thr Glu Lys Thr		560
	565	570
Glu Ile Gln Ser Thr Lys Glu Asn Leu Val Leu Ser Ser Gly Lys Glu		575
	580	585
Val Ile Asn Lys Ser Lys Ser Lys Lys Ile Arg Leu Ser		590
	595	600
		605

130 135 140
 145 150 155
 160 165 170
 175 180 185
 190 195 200
 205 210 215
 220 225 230
 235 240 245
 250 255 260
 265 270 275
 280 285 290
 295 300 305
 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395
 400 405 410
 415 420 425
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 460 465 470
 475 480 485
 490 495 500
 505 510 515
 520 525 530
 535 540 545
 550 555 560
 565 570 575
 580 585 590
 595 600 605

<210> 7639
 <211> 143
 <212> PRT
 <213> B.fragilis

<400> 7639

Lys	Gln	Ile	Thr	Met	Gly	Phe	Phe	Asp	Arg	Leu	Phe	Lys	Gly	Lys	Glu
1				5					10					15	
Val	Phe	Ala	Asp	Arg	Arg	Asn	Pro	Asp	Met	Val	Cys	Glu	Ile	Thr	Leu
			20					25					30		
Cys	Gly	Gln	Ser	His	Ile	Leu	Ser	Glu	Phe	Asp	Ile	Ala	Tyr	Glu	Pro
		35					40					45			
Asp	Asn	Ser	Ser	Lys	Glu	Tyr	Met	Glu	Ala	Tyr	Ala	Val	Phe	Ser	Glu
	50					55					60				
Pro	Val	Asn	Ala	Glu	Val	Glu	Asn	Trp	Ile	Met	Arg	Ala	Asp	Arg	Lys
65					70					75					80
Glu	Asn	Gly	Thr	Val	Arg	Phe	Tyr	Leu	Asn	Ser	Asp	Ala	Met	Asp	Glu
				85					90					95	
Gly	Ala	Leu	Phe	Glu	Ile	Asn	Phe	Ser	Asn	Ala	Ser	Cys	Val	His	Tyr
			100					105					110		
His	Asn	Val	Ser	Gln	Gly	Asp	Thr	Ser	Val	Lys	Thr	Ile	Val	Met	Thr
		115					120					125			
Phe	Pro	Ser	Val	Arg	Met	Gly	Gly	Asp	Glu	Phe	Glu	Leu	Lys	Arg	
	130					135					140				

<210> 7640
 <211> 290
 <212> PRT
 <213> B.fragilis

<400> 7640

Val	Asn	Thr	Thr	Lys	Gln	Thr	Thr	Ser	Met	Glu	Trp	Tyr	Thr	Lys	Tyr
1				5					10					15	
Leu	Ser	Ile	Phe	Gly	Leu	Thr	Leu	Ser	Glu	Ile	Pro	Gly	Asp	Thr	Leu
			20					25					30		
Ser	Glu	Ile	Gly	Thr	Leu	Leu	His	Glu	Lys	Gln	Ser	Asp	Thr	Pro	Leu
		35					40					45			
Val	Ser	Val	Val	Val	Ile	Ala	His	Asn	Glu	Glu	Pro	His	Ile	Leu	Ser
	50					55					60				
Cys	Leu	Trp	Ser	Leu	Gly	Asn	Asn	Glu	Tyr	Ser	Tyr	Pro	Ile	Glu	Ile
65					70					75					80
Leu	Val	Val	Asn	Asn	His	Ser	Thr	Asp	Arg	Thr	Glu	Gln	Ala	Leu	Gln
				85					90					95	
Ala	Val	Gly	Ala	Thr	Tyr	Phe	Asn	Glu	Leu	Lys	Lys	Gly	Pro	Gly	Tyr
			100					105					110		
Ala	Arg	Gln	Cys	Gly	Leu	Asp	His	Ala	Lys	Gly	Arg	Tyr	His	Ile	Cys
		115					120					125			
Ile	Asp	Ala	Asp	Thr	Met	Tyr	Pro	Pro	His	Tyr	Ile	Asp	Thr	His	Val
	130					135					140				
Arg	Asn	Leu	Met	Lys	Pro	Gly	Val	Ala	Cys	Thr	Phe	Ser	Leu	Trp	Ser
145					150					155					160
Phe	Ile	Pro	Asp	Lys	Arg	His	Ser	Arg	Leu	Gly	Leu	Trp	Leu	Tyr	Glu
				165					170					175	
Cys	Leu	Arg	Asp	Leu	His	Leu	Ser	Ile	Gln	Ala	Ile	Lys	Arg	Pro	Glu
		180						185					190		
Leu	Cys	Val	Arg	Gly	Met	Thr	Phe	Gly	Phe	Asn	Thr	Glu	Leu	Gly	Arg
		195					200					205			
Leu	Phe	Gly	Phe	Arg	Thr	Asp	Ile	Arg	Arg	Gly	Glu	Asp	Gly	Ser	Leu

210	215	220
Ala Leu Ala Met Lys Pro Tyr Gly Arg Leu Ile Phe Ile Thr Ser Arg		
225	230	235
Lys Ala Arg Ala Leu Thr Ser Asn Ser Thr Ile Asp Ala Asp Gly Ser		240
	245	250
Leu Ala Arg Ser Phe Gly Val Arg Leu Leu Lys Ala Leu Lys Gly Ala		255
	260	265
Thr Gly Leu Leu Tyr Lys Lys Thr Thr Tyr Lys Asp Lys Asp Ser Asn		270
	275	280
Leu Leu		285
290		

<210> 7641

<211> 322

<212> PRT

<213> B.fragilis

<400> 7641

Pro Leu Gln Thr Asn Ala Met Glu Gln Pro Asn Lys His Pro Lys Val		
1	5	10
Ser Val Ile Ile Pro Ile Tyr Asn Thr Cys His Tyr Val Gln Glu Ala		15
	20	25
Leu Glu Ser Ile Cys Arg Gln Thr Leu Thr Glu Leu Glu Ile Ile Ala		30
	35	40
Ile Asp Asp Gly Ser Thr Asp Ser Ser Arg Lys Val Val Glu Gln Val		45
	50	55
Ala Ala Thr Asp Met Arg Ile Arg Val Tyr Ser Gln Ala Asn Gln Gly		60
65	70	75
Gln Ser Ile Thr Arg Asn Asn Gly Met Gln Tyr Val Gln Gly Lys Tyr		80
	85	90
Val Tyr Phe Met Asp Ser Asp Asp Arg Leu Glu Ala Asp Thr Leu Glu		95
	100	105
Thr Cys Tyr Ser Ala Cys Glu Ala Gly Gln Leu Asp Phe Val Cys Phe		110
	115	120
Asp Ala Asp Ile Leu Asn Lys Asp His Pro Cys Ala Arg His Phe Asn		125
	130	135
Tyr Asp Arg Ser Ala Cys Ala Arg Pro Lys Gln Val Tyr Lys Gly Val		140
145	150	155
Glu Leu Leu Gln Arg Gln Leu Ser Ala Arg Val Phe Ser Pro Ser Pro		160
	165	170
Cys Leu Asn Leu Ile Ser Thr Ser Tyr Leu Lys Thr Ser Gly Leu Thr		175
	180	185
Phe Tyr Pro Arg Ile Ile His Glu Asp Gln Leu Phe Thr Ser Gln Leu		190
	195	200
Tyr Leu Lys Ala Glu Lys Val Gly Tyr Ile Pro Gln Lys Phe Phe Leu		205
	210	215
Arg Arg Phe Arg Thr Asp Ser Thr Met Thr Arg Gln Phe Thr Trp Arg		220
225	230	235
Asn Met Glu Gly Tyr Leu Thr Val Thr Asp Glu Leu Leu Lys Ala Ala		240
	245	250
Pro Ser Tyr Pro Glu Asn Val Arg Arg Leu Ile Arg Gln Phe Leu Cys		255
	260	265
Gln Met Leu Asp Ala Ala Val Trp Gln Ala His Thr Leu Pro Leu Arg		270
	275	280
Gln Arg Ile Gly Leu Phe Leu Cys Leu Arg His Tyr Arg Pro Tyr		285
	290	295
Val Arg Met Arg Thr Leu Met Val Leu Met Leu Lys Lys Lys Glu Glu		300
305	310	315
Gly Arg		320

<210> 7642
 <211> 1035
 <212> PRT
 <213> B.fragilis

<400> 7642

Leu	Asn	Lys	Thr	Ile	Cys	Thr	Ile	Lys	Arg	Asn	Lys	Met	Asn	Tyr	Met
1				5					10					15	
Gln	Ile	Leu	Ser	Cys	Trp	His	Lys	Leu	Glu	His	Phe	Ser	Pro	Ala	Ile
			20					25					30		
Leu	Pro	Lys	Asp	Lys	Ser	Leu	Lys	Pro	Leu	Lys	Glu	Leu	Pro	Trp	Met
		35					40					45			
Arg	Pro	Leu	Glu	Ala	Lys	Asp	Pro	Lys	Lys	Thr	Ile	Gln	Tyr	Thr	Ile
	50					55					60				
Tyr	Leu	Gly	Val	Phe	Ser	Gln	Ile	Ser	Val	Ser	Asp	Phe	Val	Lys	Asp
65					70					75				80	
Phe	Phe	Lys	Asp	Glu	Arg	Asn	Asn	Pro	Asn	Val	Thr	Asp	Ala	Lys	Val
			85					90						95	
Cys	Tyr	Ala	Ser	Leu	Lys	Leu	Asp	Asn	Leu	Gly	Val	Tyr	Ile	Gln	Asn
			100					105					110		
Thr	Phe	Gly	Phe	Ser	Thr	Met	Pro	Trp	Ala	Leu	Arg	Gln	Leu	Glu	Ala
		115					120					125			
Gly	Lys	Val	Asn	Thr	Asn	Ser	Trp	Ser	Glu	Asp	Phe	Asp	Lys	Leu	Arg
	130				135						140				
Lys	Asn	Leu	Leu	Glu	Arg	Leu	Gly	Glu	Asn	Arg	Lys	Glu	Leu	Ala	Glu
145					150					155					160
Asp	Tyr	Ser	Ser	Tyr	Leu	Ser	Glu	Thr	Gln	Thr	Leu	Glu	Asn	Leu	Gln
				165					170					175	
Gln	Ile	Gln	Ala	Leu	Ile	Ile	Gln	Asp	Leu	Lys	Trp	Ser	Thr	Ser	Pro
			180					185					190		
Glu	Thr	Glu	Ile	Tyr	Val	Arg	Ile	Glu	Glu	Val	Tyr	Lys	Lys	Asn	Asn
		195					200					205			
Thr	Ser	Asp	Lys	Glu	Glu	Ala	Asn	Ala	Asp	Leu	Leu	Asn	Ser	Phe	Tyr
	210					215						220			
Ile	Asp	Asp	Leu	Glu	Arg	Ile	Ile	Thr	Ser	Ser	Val	Lys	Gly	Ser	Tyr
225					230						235				240
Asn	Thr	Ala	Phe	Arg	Asn	Tyr	Leu	Ser	Ala	Cys	Leu	Asn	Lys	Asp	Phe
			245						250					255	
Val	His	Phe	Asp	Leu	Ser	Leu	Gln	Pro	Glu	Ile	Leu	Lys	Glu	Cys	Leu
			260					265					270		
Val	Pro	Glu	Asn	Tyr	Pro	Asp	Gly	Cys	Trp	Pro	Ser	Pro	His	Thr	Ala
		275					280					285			
Ser	Leu	Met	Gln	Gln	Phe	Ala	Val	Asn	Thr	Val	Ser	Lys	Glu	Leu	Ser
	290					295					300				
Gly	Glu	Lys	Gln	Glu	Gly	Ile	Phe	Ser	Val	Asn	Gly	Pro	Pro	Gly	Thr
305					310					315					320
Gly	Lys	Thr	Thr	Leu	Leu	Arg	Asp	Ile	Ile	Ala	Ala	Ile	Leu	Val	Lys
				325					330					335	
Arg	Ala	Lys	Lys	Met	Val	Asn	Phe	Thr	Glu	Pro	Ala	Lys	Ala	Phe	Arg
			340					345					350		
Lys	Ile	Gly	Glu	Val	Gln	Val	Ser	Glu	Lys	Tyr	Thr	Pro	Ser	Ile	Tyr
	355						360					365			
Glu	Pro	Asp	Ser	Ser	Ile	Cys	Asp	Gly	Gly	Ile	Val	Val	Ala	Ser	Ser
	370					375					380				
Asn	Asn	Gly	Ala	Val	Glu	Asn	Ile	Ser	Lys	Glu	Leu	Pro	Leu	Lys	Lys
385					390					395					400
Glu	Ala	Arg	Gly	Tyr	Ser	Asp	Gln	Val	Gly	Tyr	Phe	Arg	Gln	Val	Ser

405																410																415															
Glu	Glu	Cys	Val	Gly	Glu	Glu	Ser	Trp	Gly	Leu	Ile	Ala	Ala	Val	Met																																
420																425																430															
Gly	Asn	Lys	Glu	Asn	Gln	Arg	Lys	Leu	Ile	Tyr	Ser	Ile	Trp	Asp	Gly																																
435																440																445															
Asp	Ser	Glu	Glu	Glu	Ser	Tyr	Thr	Leu	Lys	Gln	Gln	Leu	Lys	Asp	Tyr																																
450																455																460															
Lys	Pro	Thr	Glu	Glu	Glu	Trp	Leu	Asn	Ile	Val	Val	Ser	Phe	Lys	Asn																																
465																470																475															
Lys	Leu	Glu	Glu	Val	Glu	Ile	Glu	Lys	Ser	Arg	Leu	Thr	Gly	Phe	Met																																
485																490																495															
Lys	Asp	Ala	Glu	Ser	Ile	Glu	Lys	Leu	Arg	Ile	Gln	Leu	Glu	Asp	Ala																																
500																505																510															
Glu	Ser	His	Leu	Ser	His	Val	Asp	Lys	Glu	Leu	Glu	Gly	Leu	Leu	Glu																																
515																520																525															
Glu	Lys	Asn	Leu	Leu	Ser	Thr	Glu	Ile	Lys	Arg	Gly	Lys	Gln	Gln	Lys																																
530																535																540															
Glu	Asp	Ala	Met	Thr	Glu	Leu	Lys	Leu	Leu	Gln	Ser	Thr	Arg	Pro	Gly																																
545																550																555															
Phe	Phe	Ile	His	Trp	Phe	Asn	Lys	Thr	Val	Arg	Thr	Gln	Tyr	Lys	Lys																																
565																570																575															
Ala	Leu	Thr	Ala	Thr	Leu	Thr	Lys	Tyr	Asn	Gln	Leu	Ser	Glu	Glu	Ile																																
580																585																590															
Thr	Lys	Gln	Lys	Thr	Ser	Leu	Gln	Ala	Leu	Asp	Leu	Arg	Val	Glu	Lys																																
595																600																605															
Gln	Arg	Lys	Ile	Gln	Glu	Gln	Ser	Gln	Lys	Asp	Tyr	Asp	Arg	Ile	Asn																																
610																615																620															
Ser	Asp	Tyr	Ala	Arg	Leu	Ser	Glu	Leu	Thr	Glu	Ala	Ala	Arg	Gln	Glu																																
625																630																635															
Leu	Lys	Gly	Ala	Tyr	Ala	Asp	Ala	Ser	Phe	Trp	Lys	Gln	Ile	Glu	Ser																																
645																650																655															
Lys	Glu	Val	Gln	Glu	Ile	Ser	Pro	Trp	Tyr	Ser	Lys	Arg	Leu	Lys	Gln																																
660																665																670															
Leu	Gln	Ser	Glu	Leu	Phe	Ile	Glu	Ala	Met	Lys	Val	Asn	Glu	Leu	Phe																																
675																680																685															
Ile	Leu	Arg	Ala	Asn	Ala	Thr	Ser	Ser	Arg	Ile	Lys	Thr	Thr	Leu	Asp																																
690																695																700															
Val	Phe	Phe	Asn	Phe	Leu	Lys	Thr	Gly	Gly	Asn	Leu	Thr	Glu	Arg	Glu																																
705																710																715															
Ile	Gln	Ala	Ile	Trp	Asn	Thr	Phe	Trp	Leu	Ile	Val	Pro	Val	Val	Ser																																
725																730																735															
Ser	Thr	Phe	Ala	Ser	Ile	Gln	Arg	Met	Phe	Ser	Gln	Met	Lys	Thr	Gly																																
740																745																750															
Thr	Ile	Pro	Trp	Leu	Phe	Val	Asp	Glu	Ala	Gly	Gln	Ala	Val	Pro	Gln																																
755																760																765															
Ala	Ala	Ala	Gly	Ala	Ile	Trp	Arg	Ser	Lys	Arg	Ala	Val	Ile	Val	Gly																																
770																775																780															
Asp	Pro	Phe	Gln	Ile	Glu	Pro	Val	Val	Thr	Ile	Pro	Glu	Gln	Ile	Val																																
785																790																795															
Asn	Asn	Ile	Ser	His	His	Phe	Gly	Leu	Asp	Lys	Thr	Gln	Ile	Gln	Thr																																
805																810																815															
Ser	Leu	Ser	Val	Gln	Ser	Met	Ala	Asp	Arg	Ala	Asn	Pro	Tyr	Gly	Trp																																
820																825																830															
Ile	Thr	Asn	Asp	Thr	Trp	Thr	Gly	Ser	Pro	Leu	Arg	Val	His	Arg																																	

Asn Gly Phe Leu Gln Val Glu Gly Lys Val Ser Gly Arg His Tyr Val
 885 890 895
 Pro Glu Gln Gly Ile Leu Ile Arg Gln Met Ile Ile Asp Glu Ile His
 900 905 910
 His Leu Gln Asp Leu Pro Asp Leu Phe Val Ile Ser Pro Phe Ser Glu
 915 920 925
 Ile Pro Pro Ile Leu Lys Lys Glu Leu Arg Gln Pro Ile Lys Gln Ala
 930 935 940
 Leu Ala Thr Tyr Lys Ser Ile Glu Asp Asn Glu Leu Lys Lys Trp Leu
 945 950 955 960
 Asp Ala His Ile Gly Thr Val His Thr Phe Gln Gly Lys Gln Ala Ala
 965 970 975
 Gly Val Ile Leu Cys Leu Gly Leu Asp Glu Lys Ser Lys Gly Ala Ala
 980 985 990
 Ser Trp Ala Ser Ser Lys Pro Asn Leu Leu Asn Val Ala Leu Thr Arg
 995 1000 1005
 Ala Lys Gln Arg Phe Val Ala Val Gly Asp Gly Asp Ile Trp Leu Arg
 1010 1015 1020
 Gln Pro Tyr Phe Ser Lys Leu Lys Ala Leu Asn
 1025 1030 1035

<210> 7643

<211> 141

<212> PRT

<213> B.fragilis

<400> 7643

Leu Leu Lys Thr Asn Gly Met Glu Leu Phe Ser Phe Leu Gln Val Asp
 1 5 10 15
 Ser Asp Leu Thr Ala Trp Phe Ile Leu Asp Gly Gln Glu Tyr Glu Met
 20 25 30
 Ser His Phe Asp Ile Asn Phe Ala Gln Ser Val Asp His Lys Gly Gln
 35 40 45
 Pro Gln Asp Glu Val Arg Gly Gly Ile Met Ser Ile Thr Leu Ser Gln
 50 55 60
 Thr Leu Pro Glu Asn Ile Tyr Arg Trp Gly Met Thr Ser Ile Pro Lys
 65 70 75 80
 Asn Gly Ser Val Ile Phe Lys Ser Lys Thr Thr Asn Pro Pro Leu Lys
 85 90 95
 Ile Asn Phe Ile Asn Ala Tyr Cys Ile Arg Phe Asn Arg Ser Ile Ala
 100 105 110
 Asn Glu Gly Gly Leu Glu Ser Gln Leu Val Ile Ser Pro Asp Glu Met
 115 120 125
 Leu Ile Asn Gly Ile Ser Phe Asp Asn His Trp Val Lys
 130 135 140

<210> 7644

<211> 120

<212> PRT

<213> B.fragilis

<400> 7644

Asp Glu Lys Thr Phe Leu Gln Asn Lys Lys Met Ile Phe Phe His Lys
 1 5 10 15
 Val Ile Cys Phe Ile Leu Ile Ile Phe Arg Gln Leu Ser Val Cys Ala
 20 25 30
 Thr Lys Val Lys Phe Tyr Phe Phe Thr Thr Val Ser Arg Gln Asp Thr
 35 40 45
 Ile Ile Gln Asn Ile Tyr Ile Ile Phe Asn Arg Lys His Asn Ser Asn

50		55		60
Ala Gln Thr Ile Ile	Ala Gln Met Lys Lys Lys	Ile Thr Lys Thr Leu		
65	70	75	80	
Leu Ile Glu Pro Glu	Asp Glu Lys Ile Glu Met Val Asn Asn Val Ile			
	85	90	95	
His Gln Ser Ile Glu Glu Leu Leu Val Pro Tyr Glu Lys Arg Arg Thr				
	100	105	110	
Tyr Leu Pro Arg Lys Pro Pro Lys				
	115	120		

<210> 7645
 <211> 259
 <212> PRT
 <213> B.fragilis

<400> 7645

Leu Asn Phe Leu Leu Phe Asn Lys Tyr Tyr Ile Ile Met Met Gly Gln	
1	5 10 15
Gly Asp Lys Lys Ile Arg Ile Arg Arg Thr Asn Glu Gln Leu Asp Lys	
	20 25 30
Glu Val Ile Ser Glu Phe Glu Lys Leu Val Gly Glu Phe Gly Phe Gly	
	35 40 45
Asn Val Asn Leu Ser Ala Leu Met Lys Ala Ala Asp Leu Glu Ala Asn	
	50 55 60
Val Phe Tyr Arg Arg Tyr Gly Ser Met Asp Asn Leu Tyr Asp Arg Leu	
65	70 75 80
Ala Lys Gln Tyr Asp Phe Trp Ile Asn Asn Thr Ile Asp Ile Ser Thr	
	85 90 95
Leu Asn Thr Leu Gly Pro Lys Lys Phe Phe Ala Glu Thr Phe Lys Thr	
	100 105 110
Leu Phe Arg Asn Leu Ser Glu Asn Ser Val Met Gln Lys Leu Leu Leu	
	115 120 125
Tyr Glu Met Thr Thr Ile Asn Ser Thr Thr Lys Arg Ser Ala Glu Thr	
	130 135 140
Arg Asp Val Met Asn Leu Asn Leu Ile Thr Phe Tyr Glu Asn Leu Phe	
145	150 155 160
Ala Pro Ala Lys Ile Asn Ile Lys Ser Ile Ala Ser Ile Leu Ile Gly	
	165 170 175
Gly Ile Tyr Tyr Leu Ile Leu His Lys Glu Cys Ala Lys Ile Cys Thr	
	180 185 190
Ile Asp Tyr Lys Thr Lys Glu Gly Glu Asn Ala Phe Ser Glu Gly Ile	
	195 200 205
Asp Phe Leu Thr Asp Ile Ile Phe Asp Arg Leu Glu Met Tyr Asp Arg	
	210 215 220
Asp Lys Lys Ala Ile Arg Gln Met Ile Ser Asp Gly Ile Ser Glu Ser	
225	230 235 240
Lys Ile Cys Lys Tyr Met Gly Ile Asn Lys Asn Asp Leu Lys Thr Leu	
	245 250 255

Leu Ser Glu

<210> 7646
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 7646

Lys Glu Ala Ala Glu Arg Ala Gly Ile Lys His Arg Val His Val His
1 5 10 15

Met Leu Arg His Ser Phe Ala Thr His Leu Leu Glu Gln Gly Thr Asp
 20 25 30
 Leu Arg Thr Ile Gln Glu Leu Leu Gly His Asn Asp Ile Lys Thr Thr
 35 40 45
 Ser Ile Tyr Leu His Val Thr Ser Ala His Lys Ser Ser Ile Pro Asn
 50 55 60
 Pro Leu Asp Thr Leu Asp Asp Ser
 65 70

<210> 7647
 <211> 280
 <212> PRT
 <213> B.fragilis

<400> 7647
 Ile Thr Ser Ala Lys Ile Ser Tyr Gly Asn Asn Lys Pro Pro Ile Lys
 1 5 10 15
 Ile Phe Met Thr Asp Phe Asn Trp Met Leu Trp Ile Val Thr Pro Ile
 20 25 30
 Ile Ile Val Tyr Tyr Leu Tyr Arg His Val Trp Pro Ala Val Arg Lys
 35 40 45
 Phe Ile Arg Leu Phe Gln Gly Ile Arg Ile Asn Pro Arg Ser His Leu
 50 55 60
 Thr Glu Ala Glu Tyr Lys Lys Leu Ser Val Gly Ser Leu Tyr Ala Leu
 65 70 75 80
 Gln Gln Gly Ala Tyr Leu Asn Ser Leu Thr Leu Asp Ser Lys Asp Lys
 85 90 95
 Leu Pro Thr Ile Leu Ala Asp Trp Trp Gly Ile Cys Asn Ala Gln Asp
 100 105 110
 Ala Lys Gln Thr Leu Glu Tyr Leu Gly Lys Lys Gly Phe Ala Tyr Tyr
 115 120 125
 Phe Pro His Val Tyr Gln Ala Phe Leu Leu Asp Asp Glu Glu Ala Lys
 130 135 140
 Asp Arg Ile Phe Gln Gln His Met Asp Ser Gln Glu Asp Tyr Asp Lys
 145 150 155 160
 Ala Val Glu Gln Leu His Asn Leu Glu Asp Cys Tyr Asp Glu Leu Leu
 165 170 175
 Glu Cys Gly Thr Ile Thr Cys Arg Glu Asp Leu Leu Arg Tyr Gly Val
 180 185 190
 Thr Gly Trp Asp Ala Gly Arg Leu Asn Phe Met Ala Arg Ala Cys Tyr
 195 200 205
 Asp Met Lys Tyr Ile Ser Glu Asp Glu Ala Trp His Tyr Ile Asn His
 210 215 220
 Ala Tyr Glu Met Val His Ser Arg Phe Ser Ser Trp His Asp Phe Ala
 225 230 235 240
 Met Ser Tyr Val Ile Gly Arg Ala Leu Trp Gly Gly Lys Ser Ala Ser
 245 250 255
 Asn Ser Gly Met Met Tyr Met Ala Glu Asp Leu Leu Lys Ser Glu Lys
 260 265 270
 Ser Pro Trp Thr Lys Ile Glu Trp
 275 280

<210> 7648
 <211> 326
 <212> PRT
 <213> B.fragilis

<400> 7648
 Ile Met Lys Ala Leu Phe Leu Thr Val Ile Leu Met Ala Phe Ala Ser

1		5		10		15									
Cys	Gly	Asn	Ala	Gln	Val	Lys	Thr	Lys	Thr	Glu	Lys	Glu	Met	Lys	Gln
		20						25				30			
Glu	Ile	Ala	Lys	Leu	Glu	Glu	Leu	Ile	Lys	Glu	Glu	Leu	Gln	Met	Val
		35					40					45			
Lys	Thr	Tyr	Pro	Glu	Lys	Pro	Ala	Tyr	Tyr	Leu	Gln	Ile	Asn	Lys	Thr
	50					55					60				
Gly	Cys	Arg	Leu	Leu	Val	Arg	Val	Asp	Asp	Ile	Pro	Ile	Gly	Tyr	His
65					70					75					80
Phe	Val	Glu	Asn	Glu	Gly	Glu	Ser	Met	Leu	Tyr	Pro	Ile	Asn	Asp	Val
			85						90					95	
Leu	Phe	Gly	Ser	Gly	Lys	His	Thr	Val	Ser	Ile	Gln	Val	Tyr	Pro	Arg
		100						105					110		
Thr	Gly	Glu	Thr	Glu	Val	Thr	Lys	Asn	Ala	Ser	Val	Asn	Ile	Lys	Ile
	115						120					125			
Ile	Tyr	Tyr	Gln	Glu	Lys	Leu	Val	Gly	Met	Pro	Lys	Thr	Leu	Val	Glu
	130					135					140				
Leu	Asp	Thr	Pro	Glu	Asp	Ile	Gly	Thr	Lys	Lys	Ser	Pro	Ile	Tyr	Thr
145					150					155					160
Asp	Ser	Val	Ser	Phe	Asn	Ala	Ile	Leu	Pro	Phe	Asp	Tyr	Lys	Arg	Ile
				165					170					175	
Leu	Ala	Glu	Ala	Lys	Asp	Leu	Gln	Lys	Val	Pro	Asp	Leu	Glu	Lys	Lys
			180					185					190		
Val	Leu	Ala	His	Tyr	Asn	Lys	Val	Arg	Gln	Met	Met	Ile	Glu	Gly	Lys
		195					200					205			
Tyr	Tyr	Glu	Tyr	Glu	Lys	Met	Arg	Leu	Ser	Thr	Thr	Trp	Val	Leu	Ala
	210					215					220				
Asp	Met	Ser	Tyr	Leu	Gly	Gln	Asp	Ala	Leu	Arg	Lys	Ala	His	Ile	Asp
225					230					235					240
Glu	Asp	Tyr	Leu	Phe	Arg	Phe	Leu	Cys	Glu	Pro	Ile	Asp	Trp	Ile	Ala
				245					250					255	
Leu	Pro	Ile	Glu	Asn	Tyr	Glu	Met	Val	Ile	Cys	Gly	Asn	Arg	Lys	Leu
			260					265					270		
Val	Tyr	Leu	Arg	Arg	Lys	Val	Glu	Leu	Asp	Asp	Val	Leu	Gln	Val	Arg
	275						280					285			
Tyr	Tyr	Asp	Thr	Glu	Glu	Gln	Lys	Arg	Leu	Ser	Pro	Asp	Met	Arg	Thr
	290					295					300				
Val	Ser	Ala	Phe	Gln	Phe	Ile	Ala	Leu	Tyr	Met	Pro	Lys	Asp	Ser	Asn
305					310					315					320
Glu	Leu	Met	Glu	Leu	Tyr										
				325											

<210> 7649

<211> 135

<212> PRT

<213> B.fragilis

<400> 7649

Cys	Ala	Asn	Phe	Leu	Thr	Asn	Ser	Leu	Tyr	Asp	Phe	Gln	Ile	Asp	Asp
1				5					10					15	
Asp	Gly	Phe	Pro	Val	Arg	Glu	Gly	Ser	Val	Val	Cys	Val	Ser	Pro	Ala
			20					25					30		
Pro	Ser	Arg	Gly	Met	Arg	Asn	Ser	Ser	Asp	Glu	Pro	Met	Ile	Tyr	Met
		35					40					45			
Val	Ile	Gln	Ser	Lys	Glu	Asn	Ser	Val	Gly	Asn	Tyr	Ser	Thr	Glu	Asp
	50					55				60					
Gly	Thr	Arg	Thr	Phe	Tyr	Thr	Glu	Leu	Leu	His	Trp	Ile	Lys	Glu	Val
65					70					75					80
Leu	Ser	Glu	Asn	Leu	Asp	Leu	Met	Lys	Ser	Leu	Leu	Asp	Asn	Asp	Leu

				85					90					95	
Ala	Glu	Glu	Lys	Ala	Lys	Asn	Leu	Val	Gly	Leu	Asp	Val	Thr	Asn	Asp
			100						105					110	
Trp	Ser	Gln	Glu	Ser	Ile	Glu	Ile	Leu	Phe	Lys	Leu	Val	Leu	Met	Tyr
		115					120					125			
Ala	Asn	Arg	Glu	Pro	Tyr	Tyr									
	130					135									

<210> 7650
 <211> 293
 <212> PRT
 <213> B.fragilis

<400> 7650

Ile	Lys	Tyr	Tyr	Cys	Ile	Arg	Cys	Phe	Ile	Ser	Lys	Lys	Arg	Gly	Ile
1				5					10					15	
Phe	Arg	Ala	Leu	Val	Ala	Asn	Leu	Ser	Tyr	Ile	Cys	Thr	Asp	Phe	Ala
			20					25					30		
Ser	Lys	Gln	Thr	Ile	Tyr	Thr	Asn	Lys	Tyr	Ile	Asp	Met	Lys	Arg	Val
		35					40					45			
Leu	Phe	Ile	Leu	Cys	Ser	Ile	Pro	Leu	Leu	Leu	Phe	Ser	Pro	Val	Ser
	50					55					60				
Phe	Ala	Asn	Ala	Gln	Glu	Thr	Ser	Asp	Phe	Ser	Lys	Leu	Asn	Pro	Glu
65					70					75					80
Asp	Tyr	Thr	Asn	Ile	Ser	Leu	Pro	Pro	Leu	Asp	Leu	Leu	Phe	Glu	Asn
				85					90					95	
Ala	Lys	Gly	Gly	Pro	Ile	Tyr	Glu	Leu	Ala	Ser	Val	Lys	Glu	Gln	Ile
			100					105						110	
Glu	Arg	Lys	Leu	Leu	Ala	Lys	Glu	Arg	Arg	Ala	Phe	Leu	Gln	Phe	Phe
		115					120						125		
Ser	Val	Arg	Gly	Ser	Tyr	Gln	Trp	Gly	Arg	Phe	Gly	Val	Asp	Asn	Thr
	130					135					140				
Phe	Thr	Asp	Val	Ala	Thr	Pro	Ile	Met	Tyr	Asn	Tyr	Ser	Thr	Ser	Lys
145					150					155					160
Gln	Lys	Met	Tyr	Thr	Val	Gly	Gly	Ala	Ile	Asn	Ile	Pro	Phe	Asn	Glu
				165					170						175
Leu	Phe	Asp	Leu	Val	Pro	Arg	Val	Arg	Gln	Lys	Leu	Thr	Val	Lys	
		180						185					190		
Thr	Ala	Val	Leu	Glu	Arg	Glu	Val	Lys	Phe	Glu	Glu	Met	Lys	Arg	Glu
		195					200					205			
Ile	Ile	Glu	Leu	Tyr	Ala	Thr	Ala	Thr	Ser	Gln	Leu	Asn	Val	Leu	Lys
	210					215						220			
Leu	Arg	Ala	Glu	Ala	Leu	Glu	Leu	Ala	Asn	Met	Gln	Tyr	Asp	Ile	Ala
225					230					235					240
Glu	Lys	Asn	Phe	Val	Asn	Asn	Thr	Ile	Asn	Thr	Gly	Asp	Leu	Ser	Val
				245					250					255	
Glu	Lys	Glu	Arg	Gln	Ser	Thr	Ala	Leu	Glu	Ala	Phe	Glu	Lys	Ser	Arg
			260					265					270		
Phe	Glu	Val	Thr	Lys	Ser	Leu	Met	Ile	Leu	Glu	Val	Val	Thr	Arg	Thr
	275						280						285		
Pro	Ile	Leu	Lys	Lys											
	290														

<210> 7651
 <211> 330
 <212> PRT
 <213> B.fragilis

<400> 7651

Asn	Lys	Pro	Tyr	Met	Asp	Ala	Ser	Lys	Gln	Arg	Gly	Ser	Ile	Val	Leu
1				5					10					15	
Thr	Lys	Gln	Asn	Ile	Asp	Gly	Gln	Asp	Tyr	Ile	Arg	Ile	Glu	Tyr	Thr
			20					25					30		
Asp	Asn	Gln	Thr	Ile	Ala	Leu	Leu	Ser	Gln	Asp	Lys	Gly	Ile	Lys	
		35					40				45				
Thr	Ile	Gly	Asn	Gly	Ser	Ala	Tyr	Ile	Gln	Ala	Ser	Thr	Phe	Gln	Leu
	50					55					60				
Pro	Glu	Phe	Tyr	Thr	Arg	Tyr	Ser	Pro	His	Ala	Tyr	Ile	Asp	Tyr	Ser
65					70				75						80
Arg	Val	Tyr	Val	Arg	His	Pro	Lys	Pro	Gln	Arg	Glu	Tyr	Val	Leu	Pro
				85					90					95	
Lys	Gly	Tyr	Leu	Glu	Leu	Leu	Glu	Gln	Lys	Arg	Tyr	Ser	Pro	Ser	Thr
			100					105					110		
Ile	Lys	Thr	Tyr	Arg	Ile	Tyr	Phe	Ser	Asp	Phe	Met	Glu	Tyr	His	Lys
		115					120					125			
Gly	Arg	Asn	Ile	Asp	Tyr	Leu	Lys	Val	Ala	Asp	Ile	Asn	His	Tyr	Ile
	130					135					140				
Leu	Tyr	Leu	Val	Asn	Glu	Lys	Lys	Ile	Ser	Val	Ser	Gln	Gln	Asn	Met
145					150				155						160
Arg	Ile	Asn	Ala	Ile	Lys	Phe	Tyr	Tyr	Glu	Arg	Val	Lys	Gly	Gly	Lys
			165						170					175	
Cys	Gln	Tyr	Tyr	Gly	Gly	Ile	Thr	Gly	Ala	Lys	Glu	Tyr	Lys	Thr	Leu
		180						185					190		
Pro	Glu	Val	Leu	Ser	Arg	Asn	Glu	Ile	Ser	Arg	Ile	Leu	Ser	Cys	Leu
		195					200					205			
Pro	Asn	Leu	Lys	His	His	Cys	Met	Ile	Ser	Leu	Ile	Tyr	Ser	Val	Gly
	210					215					220				
Leu	Arg	Arg	Ser	Glu	Leu	Leu	Asn	Leu	Ile	Pro	Lys	Asp	Ile	Ile	Ser
225					230				235						240
Glu	Arg	Met	Leu	Val	Arg	Ile	Met	Gly	Lys	Arg	Lys	Lys	Cys	Arg	Tyr
			245					250					255		
Ser	Leu	Leu	Ser	Glu	Lys	Val	Leu	Asn	Glu	Leu	Arg	Thr	Tyr	Tyr	Lys
		260						265					270		
Glu	Tyr	Arg	Pro	Lys	Lys	Trp	Leu	Phe	Glu	Gly	Asp	Ser	Pro	Gly	Glu
		275					280					285			
Gln	Tyr	Ser	Ala	Ser	Ala	Leu	Val	Lys	Val	Leu	Lys	Arg	Gly	Cys	Arg
	290					295					300				
Thr	Cys	Arg	Tyr	Gln	Thr	Ser	Gly	Thr	Cys	Thr	His	Ala	Pro	Ser	Leu
305				310					315						320
Phe	Arg	Tyr	Pro	Phe	Val	Gly	Thr	Arg	Tyr						
			325						330						

<210> 7652

<211> 227

<212> PRT

<213> B.fragilis

<400> 7652

Tyr	Gly	Leu	Tyr	Gly	Asn	Lys	Ile	Val	Phe	Ser	Gly	Leu	Glu	Asn	Ile
1				5					10					15	
Lys	Asp	Cys	Cys	Lys	Met	Lys	Ile	Thr	Arg	Asp	Glu	Leu	Leu	Ile	Ala
		20						25					30		
Ala	Phe	Lys	Leu	Phe	Met	Ser	Val	Asn	Tyr	Glu	Lys	Ala	Ser	Phe	Ala
		35					40					45			
Glu	Leu	Gly	Lys	Met	Leu	Gly	Met	Ser	Lys	Ala	Gly	Ile	Phe	Lys	Tyr
	50					55					60				
Tyr	Lys	Asn	Lys	Gln	Glu	Leu	Phe	Ile	Ala	Val	Val	Asp	Lys	Phe	Trp
65				70					75						80

Phe Ser Thr Gln Asn Pro Arg Asn Lys Phe Thr Glu Thr Asn Gly Thr
 85 90 95
 Phe Ala Glu Phe Ile Asp Glu Tyr Val Arg Gly Val Gln Arg Thr Met
 100 105 110
 Asp Met Leu Gly Asp Leu Ile Gly Ala Glu Arg Glu Lys Val Ala Gln
 115 120 125
 Gly Lys Phe Thr Tyr His Ala Gln Tyr Phe His Phe Leu Phe Gln Leu
 130 135 140
 Leu Gln Tyr Asp Pro Asp Ala Lys Glu Lys Leu Arg Asn Leu Val Asp
 145 150 155 160
 Gly Asp Tyr Ala Tyr Trp Arg Ala Ala Ile Gln Arg Ala Ile Ala Thr
 165 170 175
 Gly Glu Leu Arg Glu Asp Val Asp Val Glu Asp Ala Val Val Met Phe
 180 185 190
 Arg Gln Val Tyr Met Gly Leu Ser Phe Glu Met Ala Phe Met Gly Gly
 195 200 205
 Leu Asn Thr Gln Arg Leu Ala Lys His Leu His Ala Val Tyr Ser Leu
 210 215 220
 Leu Lys Arg
 225

<210> 7653

<211> 235

<212> PRT

<213> B.fragilis

<400> 7653

Asn Leu Glu Tyr Met Ser Asp Lys His Leu Val Cys Lys Gly Ala Thr
 1 5 10 15
 Val Tyr Cys Ser Lys Ser Met Val Asn Asn Ser Pro Gly Thr Ala Ile
 20 25 30
 Pro Leu Thr Ile Thr Ser Asn Thr Leu Val Glu Leu Asn Gly Gly Lys
 35 40 45
 Val Ala Ala Thr Asp Lys Asp Cys Thr Pro Ala Asn Met Cys Phe Gly
 50 55 60
 Asn Cys Asn Thr Gly Thr Asn Pro Pro Pro Cys Val Ala Asn Val
 65 70 75 80
 Gln Trp Ser Lys Phe Tyr Glu Gly Ala Glu Val Thr Glu Ala Gly Met
 85 90 95
 Lys Leu Leu Thr Glu Glu Ser Glu Ala Thr Cys Met Ala Phe Gly Gly
 100 105 110
 Lys Val Lys Ile Ala Phe His Gly Gln Val Ala Asn Pro Gln Pro Glu
 115 120 125
 Glu Pro Gly Glu Val Ser Pro Glu Val Met Ala Gly Ile Leu Pro Val
 130 135 140
 Asn Pro Arg Pro Glu Glu Thr Ile Val Ile Thr Glu Gly Asp Glu Glu
 145 150 155 160
 Arg Glu Lys Lys Ile Thr Asp Ala Tyr Trp Val Asp Glu Lys Thr Gln
 165 170 175
 Glu Lys Met Gln Glu Ile Tyr Pro Gly Lys Lys Val Thr Leu Cys Leu
 180 185 190
 Lys Thr Ser Gly Tyr Val Glu Gly Glu Gln Ala Asp Ile Lys Ile Lys
 195 200 205
 Met Glu Asp Gly Lys Glu Lys Thr Ala Ser Gly Glu Val Lys Arg Asp
 210 215 220
 Gly Thr Val Val Ile Glu Asn Phe Glu Ile Asp
 225 230 235

<210> 7654

<211> 251
 <212> PRT
 <213> B.fragilis

<400> 7654

Gln	Phe	Arg	Tyr	Glu	Ala	Val	Gly	Ile	Phe	Val	Gln	Gly	Asp	Cys	Gly
1				5					10					15	
Leu	Tyr	Glu	Arg	Ala	Pro	Gly	Gly	His	Tyr	Leu	Leu	Ser	Gly	Val	Cys
			20					25					30		
Arg	Ala	Thr	Gly	Thr	Phe	Thr	Ser	Asp	Ser	Ile	Arg	Asn	Ala	Phe	Ala
		35					40					45			
Asp	Trp	Gln	Tyr	Ala	Val	Ile	Pro	Gln	Ala	Pro	Asp	Ser	Thr	Pro	Ile
	50					55					60				
Leu	Gln	Val	Ala	Leu	Phe	Ser	Lys	Tyr	Pro	Val	Lys	Asp	Ser	Arg	Leu
65					70					75					80
Ile	Thr	Tyr	Pro	Asp	Ser	Arg	Asn	Cys	Ser	Met	Trp	Cys	Asp	Leu	Asp
				85					90					95	
Val	Asn	Gly	Gln	Thr	Val	Arg	Val	Phe	Asn	Asn	His	Leu	Gln	Thr	Thr
			100					105					110		
Glu	Val	Ser	Gln	Asn	Lys	Arg	Arg	Leu	Glu	Arg	Glu	Leu	Ala	Lys	Asn
		115					120					125			
Glu	Leu	Thr	Gly	Arg	Glu	Glu	Ala	Val	Ala	Arg	Gln	Leu	Leu	Glu	Gly
		130				135					140				
Leu	Asn	Glu	Asn	Phe	Arg	Lys	Arg	Ala	Ala	Gln	Ala	Lys	Thr	Leu	Glu
145					150					155					160
Gln	Leu	Ile	Arg	Thr	Thr	Pro	Tyr	Pro	Ile	Leu	Val	Cys	Gly	Asp	Phe
				165					170					175	
Asn	Ser	Leu	Pro	Ser	Ser	Tyr	Thr	Tyr	Ser	Thr	Val	Lys	Gly	Asp	Asn
			180					185					190		
Leu	Gln	Asp	Gly	Phe	Gln	Thr	Cys	Gly	His	Gly	Tyr	Met	Tyr	Thr	Phe
		195					200					205			
Arg	Tyr	Phe	Lys	Arg	Leu	Leu	Arg	Ile	Asp	Tyr	Ile	Phe	His	Ser	Lys
		210				215					220				
Glu	Phe	Lys	Gly	Val	Asp	Tyr	Tyr	Ser	Pro	Asp	Leu	Asp	Leu	Cys	Ser
225					230					235					240
Asp	His	Asn	Pro	Val	Val	Met	Glu	Val	Lys	Met					
				245					250						

<210> 7655
 <211> 828
 <212> PRT
 <213> B.fragilis

<400> 7655

Asn	Met	Asp	Phe	Leu	Asn	Ile	Asn	Glu	Thr	Val	Gln	Ser	Val	Ile	Arg
1				5					10					15	
Ile	Ser	Lys	Gly	Val	Ala	Arg	Glu	Tyr	Gly	Asn	Ala	Ser	Tyr	Ala	Pro
			20					25					30		
Ala	His	Leu	Leu	Phe	Ala	Leu	Met	His	Lys	Glu	Val	Gly	Leu	Arg	Ser
		35					40					45			
Phe	Val	Glu	Ser	Leu	Gly	Lys	Asp	Ala	Asp	Tyr	Leu	Arg	Glu	Trp	Ala
	50					55					60				
Glu	Val	Arg	Ile	Glu	Glu	Tyr	Pro	Lys	Ala	Ala	Gly	Ala	Gly	Glu	Ile
65					70					75					80
Met	Pro	Asp	Pro	Lys	Val	Asn	Glu	Leu	Phe	Glu	Gln	Ala	Asp	Asn	Val
				85					90					95	
Arg	Ile	Lys	Trp	Gly	Leu	Leu	Glu	Ile	Asn	Pro	Leu	Cys	Leu	Leu	Ala
			100					105					110		
Ala	Ile	Ala	Thr	Pro	Glu	Ala	Gly	Phe	Ser	Thr	Asp	Glu	Leu	Arg	Ser

	115		120		125										
Phe	Pro	Ile	Arg	Glu	Arg	Glu	Ile	His	Asp	Leu	Phe	Thr	Ser	Gly	Met
	130					135					140				
Gly	Asn	Met	Lys	Lys	Ser	Val	Ser	Thr	Gln	Thr	Asp	Leu	Pro	Gly	Ser
145					150					155					160
Glu	Ala	Pro	Leu	Trp	Thr	Ala	Gly	Ala	Gly	Asn	Leu	Asp	Lys	Tyr	Cys
				165					170						175
Thr	Asp	Lys	Thr	Ala	Leu	Ala	Ala	Asp	Lys	Lys	Val	Tyr	Pro	Ile	Val
			180					185					190		
Cys	Arg	Asp	Arg	Glu	Thr	Arg	Met	Met	Met	Glu	Ile	Leu	Gly	Arg	Met
		195					200					205			
Gly	Lys	Pro	Asn	Val	Leu	Ile	Ile	Gly	Asp	Ala	Gly	Val	Gly	Lys	Thr
	210					215					220				
Ala	Leu	Val	Asp	Gly	Leu	Ala	Cys	Ser	Ile	Ile	Glu	Gly	Thr	Val	Pro
225					230					235					240
Gln	Tyr	Leu	Lys	Asp	Met	Thr	Ile	Tyr	Glu	Leu	Asp	Thr	Gly	Thr	Leu
				245					250					255	
Ile	Ala	Gly	Ala	Thr	Tyr	Lys	Gly	Glu	Ile	Glu	Glu	Arg	Leu	Lys	Gly
			260				265						270		
Ile	Ile	Lys	Glu	Leu	Ser	Ala	His	Gly	Asn	Ala	Ile	Leu	Phe	Ile	Asp
		275					280					285			
Glu	Ile	His	Thr	Leu	Ile	Asp	Pro	Lys	Ser	Gly	Asn	Ser	Gly	Ala	Ala
	290					295					300				
Ser	Ile	Leu	Lys	Pro	Glu	Leu	Ala	Lys	Gly	Asn	Ile	Thr	Val	Ile	Gly
305					310					315					320
Val	Thr	Thr	Val	Asp	Glu	Tyr	Arg	Lys	Leu	Ile	Glu	Pro	Asp	His	Ala
				325					330					335	
Leu	Asn	Arg	Arg	Phe	Glu	Val	Leu	Gln	Val	Ser	Glu	Pro	Asp	Leu	Ala
			340				345					350			
Ser	Thr	Val	Asn	Met	Ile	Gln	Ala	Ala	Leu	Glu	Arg	Tyr	Glu	Ser	Tyr
		355					360					365			
His	Gly	Val	Gly	Val	Asp	Val	Asp	Ser	Leu	Pro	Glu	Cys	Val	Ala	Leu
	370				375					380					
Ala	Lys	Arg	Tyr	Val	Lys	Glu	Arg	Arg	Leu	Pro	Asp	Ala	Ala	Ile	Asp
385					390					395					400
Leu	Ile	Asp	Arg	Thr	Leu	Ser	Ala	Val	Lys	Met	Ile	Asn	Gln	Ser	Gly
				405					410					415	
Glu	Lys	Asp	Ile	Lys	Gly	Leu	Ala	Glu	Gln	Leu	Ala	Ala	Ile	Glu	Ala
			420					425					430		
Ala	Glu	Asp	Gln	Pro	Glu	Ala	Glu	Arg	Thr	Glu	Lys	Leu	Arg	Leu	Val
		435					440					445			
Asn	Phe	Thr	Met	Lys	Asn	Arg	Leu	Ser	Pro	Ile	Leu	Leu	Gly	Met	Leu
	450					455					460				
Ser	Asp	Gly	Gln	Asn	Glu	Pro	Glu	Ser	Ser	Asp	Tyr	Gly	Glu	Trp	Met
465					470					475					480
Asp	Tyr	Ile	Leu	Gly	Val	Leu	Asp	Arg	Leu	Arg	Glu	Leu	Thr	Lys	Glu
				485					490					495	
Lys	Ile	Gly	Lys	Ile	Thr	Ser	His	Glu	Val	Ala	Ala	Val	Ile	Ser	Ser
			500					505					510		
Ser	Thr	Gly	Ile	Pro	Ile	Gly	Lys	Ile	Glu	Ser	Gly	Glu	Lys	Glu	Lys
	515					520						525			
Leu	Leu	Asn	Met	Glu	Asp	Ile	Leu	Arg	Arg	Arg	Val	Val	Gly	Gln	Asp
	530					535					540				
Asn	Ala	Leu	Lys	Val	Leu	Thr	Asp	Ala	Ile	Val	Glu	Ser	Arg	Ser	Gly
545					550					555					560
Met	Asn	Lys	Pro	Gly	Gln	Pro	Ile	Gly	Ser	Phe	Phe	Leu	Leu	Gly	Pro
				565					570					575	
Thr	Gly	Thr	Gly	Lys	Thr	Glu	Leu	Ala	Lys	Ala	Leu	Ala	Glu	Ala	Leu
			580					585					590		

Phe Asn Asp Glu Lys Ala Met Ile Arg Phe Asp Met Ser Glu Phe Lys
 595 600 605
 Glu Glu His Ser Ala Ala Leu Leu Leu Gly Ala Pro Pro Gly Tyr Val
 610 615 620
 Gly Tyr Glu Glu Gly Gly Val Leu Val Asn Arg Ile Arg Arg Gln Pro
 625 630 635 640
 Tyr Ala Val Val Leu Phe Asp Glu Ile Glu Lys Ala His Ser Ser Val
 645 650 655
 Tyr Asp Ile Phe Leu Gln Ile Met Asp Glu Gly Lys Leu His Asp Arg
 660 665 670
 Leu Gly Lys Glu Gly Asp Phe Ser Asn Ser Ile Val Leu Phe Thr Ser
 675 680 685
 Asn Val Gly Ser Glu Trp Leu Ser Lys Gln Ile Asn Glu Gly Lys Asn
 690 695 700
 Pro Ser Thr Thr Asp Leu Met Glu Val Met Gly Ser Tyr Phe Arg Pro
 705 710 715 720
 Glu Phe Leu Ala Arg Leu Ser Glu Ile Val Pro Phe Ser Pro Ile Asn
 725 730 735
 Glu Thr Met Leu Val Arg Ile Phe Glu Ile Gln Leu Lys Gly Val Ile
 740 745 750
 Ala Leu Leu Glu Lys Gln His Ile Asp Ile Glu Ile Thr Glu Lys Ala
 755 760 765
 Lys Asn Leu Leu Ala Thr Arg Gly Phe Thr Pro Lys Tyr Gly Ala Arg
 770 775 780
 Gln Val Ala Gly Thr Ile Arg Asn Tyr Ile Arg Arg Pro Ile Ser Lys
 785 790 795 800
 Met Ile Val Ala Gly Thr Leu Ala Ala Gly Asn Thr Val Val Val Asp
 805 810 815
 Val Ala Asp Asn Gly Asp Ile Asp Trp Asn Val Lys
 820 825

<210> 7656
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 7656
 Cys Lys Leu Gln Ala Leu Arg Ile Val Ala Tyr Gly Asp Arg Glu Asp
 1 5 10 15
 Gln Asp Ala Arg Gln Asp Gly Ala Asp Asp Gln Arg Ile Glu Pro Gly
 20 25 30
 Ser Ala Gln Gly Cys His Asp Gly Ser Arg Ser Gly Gly Tyr Leu Tyr
 35 40 45
 Asp Glu Thr Pro Gln Gly Asp Glu Leu Lys Leu Phe Ile Ala Val Glu
 50 55 60
 Gln Arg Ile Gly Asn Asp Gly Gly Gly Ser Lys Lys
 65 70 75

<210> 7657
 <211> 162
 <212> PRT
 <213> B.fragilis

<400> 7657
 Thr Ile Thr Asn Asn Cys Ala Met Asn Lys Thr Val Gln Ser Ile Leu
 1 5 10 15
 Ser Leu Thr Ala Val Ser Leu Leu Leu Ile Val Ile Thr Phe Phe Leu
 20 25 30
 Gly Gly Leu Gly Phe Gly Arg Leu Phe Gly Ile Tyr Gly Val Met Glu

35	40	45
Asp Ser Phe Leu Gly Met	Leu Met Val Ile Asp	Met Leu Val Ile Tyr
50	55	60
Lys Val Tyr Lys Leu Tyr	Phe Cys Gln Pro Lys	Ala Ile Met Leu Leu
65	70	75
Phe Gly Leu Glu Cys Cys	Ser Ile Leu Leu Trp	Leu Val Phe Ile Cys
85	90	95
Leu Asp Gln His Leu Leu	Asp Trp Gln Ile Thr	Asn Leu Leu Gln
100	105	110
Ala Val Ser Leu Asp Gly	Phe Ala Gly Asp Glu	Arg Gly Leu Asn Met
115	120	125
Leu Ala Val Leu Cys Gly	Met Ile Tyr Pro Leu	Ile Gly Ile Gly Cys
130	135	140
Leu Phe Thr Gly Leu Arg	Phe Ile Asn Lys Leu	Val Thr Thr Lys Asp
145	150	155
Ser Ile		160

<210> 7658
 <211> 87
 <212> PRT
 <213> B.fragilis

<400> 7658

Gly Lys Asn Asn Cys Trp Phe Lys Tyr Lys Gln Val Ile Leu Asn Leu	1	5	10	15
Phe Ser Cys His Leu Ala Ile Gln Tyr Glu Leu Ala Gly Asn Lys Asn	20	25	30	
Ala Met Ser Gln Gly Ile Ile Leu Leu Leu Asn Ile Leu Ser Phe Arg	35	40	45	
Ile Asp Asn Val Gln Ile Phe Ser Leu Ile Val Tyr Met Ile Phe Lys	50	55	60	
Leu Met Met Met Val Ser Arg Phe Val Arg Val Arg Leu Tyr Val Ser	65	70	75	80
Leu Leu Leu His Arg Gly Ala	85			

<210> 7659
 <211> 419
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (401)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 7659

Leu Thr Cys Lys Cys Thr Val Pro Ser Ser Pro Val Val Lys Thr Pro	1	5	10	15
Ala Ala Phe Val Ala Ala Gln Asp Lys Gly Ile Ser Thr Val Lys Asp	20	25	30	
Gly Gln Thr Ala Val Gly Asn Thr Phe Asn Thr Asp Thr Ala Lys Gln	35	40	45	
Asp Ser Thr Pro Ala Leu Ser Lys Arg Glu Leu Arg Arg Gln Arg Val	50	55	60	
Ala Arg Arg Asn Leu His Tyr Asn Ile Leu Gly Gly Pro Ser Tyr Thr	65	70	75	80
Pro Asp Phe Gly Leu Leu Ile Gly Gly Ser Ala Leu Met Thr Phe Arg				

				85					90					95	
Met	Asn	Pro	Ser	Asp	Thr	Thr	Gln	Gln	Arg	Ser	Val	Val	Pro	Val	Ala
			100					105					110		
Ile	Ala	Leu	Met	Phe	Asn	Gly	Gly	Leu	Asn	Leu	Phe	Ser	Lys	Pro	Gln
		115					120					125			
Leu	Phe	Phe	Lys	Gly	Asp	Arg	Phe	Arg	Ile	Phe	Gly	Gln	Phe	Ser	Tyr
	130					135					140				
Lys	Asn	Thr	Gln	Glu	Asn	Phe	Tyr	Gly	Ile	Gly	Tyr	Ser	Thr	Asn	Lys
	145				150					155					160
Asp	Tyr	Val	Arg	Ser	Asp	Thr	Thr	Ser	Gln	Tyr	Arg	Tyr	Ser	Gly	Leu
				165					170					175	
Gln	Ile	Asn	Pro	Trp	Phe	Leu	Phe	Arg	Leu	Gly	Glu	Ser	Asn	Phe	Phe
			180					185					190		
Ala	Gly	Pro	Gln	Val	Asp	Leu	Asn	Tyr	Asp	His	Met	Tyr	Asp	Pro	Ala
		195					200					205			
Lys	Tyr	Leu	Val	Asp	Gln	Pro	Ser	Tyr	Lys	Ala	Ala	Gly	Gly	Thr	Asp
	210					215					220				
Lys	Gly	Tyr	Lys	Asn	Phe	Ser	Ser	Gly	Val	Gly	Phe	Leu	Leu	Thr	Tyr
	225				230					235					240
Asp	Thr	Arg	Asp	Val	Pro	Ala	Asn	Ala	Tyr	Arg	Gly	Met	Tyr	Leu	Asp
			245					250						255	
Phe	Arg	Gly	Met	Met	Tyr	Gln	Lys	Phe	Leu	Gly	Ser	Asp	Asn	Asn	Phe
		260						265					270		
Tyr	Arg	Leu	Glu	Ile	Asp	Tyr	Arg	Gln	Tyr	Lys	Thr	Leu	Arg	Lys	Arg
		275					280					285			
Gly	Val	Leu	Ala	Trp	Thr	Ala	Gln	Thr	Lys	Asn	Val	Phe	Gly	Asp	Val
	290					295					300				
Pro	Leu	Asn	Lys	Tyr	Ala	Leu	Ser	Gly	Thr	Pro	Phe	Asp	Leu	Arg	Gly
	305				310					315					320
Tyr	Tyr	Met	Gly	Gln	Tyr	Arg	Asp	Lys	Ser	Ser	His	Val	Val	Met	Ala
			325					330						335	
Glu	Tyr	Arg	Gln	Met	Ile	Asn	Thr	Asp	Lys	Gly	Asn	Trp	Val	Lys	Arg
		340					345					350			
Met	Leu	Asn	His	Val	Gly	Tyr	Val	Ala	Trp	Ala	Gly	Cys	Gly	Phe	Met
	355					360						365			
Gly	Pro	Asn	Pro	Gly	Lys	Ile	Glu	Gly	Val	Leu	Pro	Asn	Met	Gly	Val
	370				375						380				
Gly	Leu	Arg	Ile	Glu	Val	Gln	Pro	Arg	Met	Asn	Val	Arg	Leu	Asp	Leu
	385				390				395						400
Xaa	Arg	Asn	Met	Val	Asn	Lys	Gln	Asn	Leu	Phe	Tyr	Phe	Asn	Met	Thr
			405					410						415	
Glu	Ala	Phe													

<210> 7660

<211> 293

<212> PRT

<213> B.fragilis

<400> 7660

Ile	Ile	Cys	Asn	Lys	Met	Gly	Lys	Lys	Ile	Glu	Ile	Lys	Lys	Leu	Ser
1			5					10						15	
Asp	Phe	Glu	Ala	Met	Val	Asn	Ala	Gly	Asn	Thr	Thr	Tyr	Thr	Gly	Leu
			20					25					30		
Val	Glu	Gly	Ile	Gly	Tyr	Val	Tyr	Trp	Thr	Thr	Glu	Thr	Leu	Tyr	Phe
	35					40					45				
Ile	Arg	Thr	Asn	Pro	Glu	Gln	Leu	Trp	Ala	Ile	Pro	Lys	Tyr	Gln	Gln
	50				55				60						
Ile	Pro	Phe	Pro	Tyr	Phe	Gln	Arg	Lys	Asp	Ala	Ile	Ile	Glu	Thr	Lys

65					70					75				80	
Thr	Leu	His	Thr	Leu	His	Val	Leu	Ser	Lys	Asp	Glu	Leu	Leu	Lys	Leu
				85					90					95	
Asp	Tyr	Asp	Ala	Tyr	Tyr	Ala	Phe	Tyr	Gly	Ile	Val	Glu	Glu	Met	Leu
			100					105						110	
Lys	Phe	Ile	His	Arg	Ala	Asp	Ala	Ile	Lys	Ser	Tyr	Cys	Glu	Ile	Pro
		115				120						125			
Leu	Pro	Ile	Ile	Lys	Ser	Lys	Gly	Ala	Leu	Lys	Gly	Asn	Asp	Ala	Arg
		130				135					140				
Asn	Gly	Ile	Leu	Ser	Leu	Gly	Ser	Gln	Ile	Asn	Asp	Gln	Ile	Gly	Ala
145					150					155					160
Pro	Leu	Asp	Ala	Ala	Asn	Met	Leu	Met	Asp	Asn	Lys	His	Ile	Gly	Lys
				165					170					175	
Ile	Gly	Asp	Gly	Leu	Ser	Leu	Ile	Ser	Ile	Ile	Asp	Glu	Val	Gly	Asn
		180					185						190		
Gly	Glu	Tyr	Trp	Ser	Ala	Ala	Gly	Asp	Ile	Leu	Leu	Phe	Ala	Ala	Gly
		195					200					205			
Lys	Thr	Lys	Leu	Ser	Pro	Tyr	Met	Thr	Val	Ile	Ser	Leu	Gly	Thr	Trp
	210					215					220				
Met	Tyr	Glu	Thr	Asp	Leu	Met	Gln	Trp	Arg	Leu	Ala	Cys	Ile	Asn	Tyr
225					230					235					240
Ser	Asp	Tyr	Lys	Lys	Thr	Leu	Ile	Lys	Tyr	Arg	Glu	Leu	Gln	Lys	Lys
				245					250					255	
Phe	Glu	Ser	Gly	Asp	Lys	Ser	Val	Glu	Glu	Lys	Met	Asn	Glu	Cys	His
			260					265					270		
Lys	Ile	Leu	Asn	Ser	His	Tyr	Ile	Glu	Met	Gln	Lys	Asn	Leu	Gly	Asn
		275					280					285			
Leu	Gly	Val	Lys	Phe											
	290														

<210> 7661

<211> 584

<212> PRT

<213> B.fragilis

<400> 7661

Leu	Gln	Ile	Asn	Ser	Glu	His	Phe	Cys	Tyr	Leu	Cys	Ala	Ile	Asn	Ile
1			5						10					15	
Asn	Thr	His	Tyr	Leu	Tyr	Met	Ala	Asp	Lys	Lys	Ile	Ile	Phe	Ser	
			20					25					30		
Met	Val	Gly	Val	Ser	Lys	Ala	Phe	Gln	Pro	Asn	Lys	Asn	Val	Leu	Lys
		35					40					45			
Asp	Ile	Tyr	Leu	Ser	Phe	Phe	Tyr	Gly	Ala	Lys	Ile	Gly	Ile	Ile	Gly
		50				55					60				
Leu	Asn	Gly	Ser	Gly	Lys	Ser	Thr	Leu	Leu	Lys	Ile	Ile	Ala	Gly	Leu
65					70					75					80
Glu	Lys	Ser	Tyr	Gln	Gly	Glu	Val	Val	Phe	Ser	Pro	Gly	Tyr	Ser	Val
				85					90					95	
Gly	Tyr	Leu	Ala	Gln	Glu	Pro	Tyr	Leu	Asp	Asn	Thr	Lys	Thr	Val	Lys
			100					105					110		
Glu	Ile	Val	Met	Glu	Gly	Val	Gln	Pro	Ile	Val	Asp	Ala	Leu	Asn	Glu
		115					120					125			
Tyr	Glu	Glu	Ile	Asn	Gln	Lys	Phe	Gly	Leu	Pro	Glu	Tyr	Tyr	Glu	Asp
		130				135					140				
Gln	Asp	Lys	Met	Asp	Gln	Leu	Phe	Ala	Arg	Gln	Gly	Glu	Leu	Gln	Asp
145					150					155					160
Ile	Ile	Asp	Ala	Thr	Asp	Ala	Trp	Asn	Leu	Asp	Ser	Lys	Leu	Glu	Arg
				165					170					175	
Ala	Met	Asp	Ala	Leu	Arg	Cys	Pro	Pro	Glu	Asp	Gln	Ser	Val	Ala	Asn

180	185	190
Leu Ser Gly Gly Glu Arg Arg Arg Val Ala Leu Cys Arg Leu Leu Leu		
195	200	205
Gln Lys Pro Asp Ile Leu Leu Leu Asp Glu Pro Thr Asn His Leu Asp		
210	215	220
Ala Glu Ser Ile Asp Trp Leu Glu Gln His Leu Gln Gln Tyr Glu Gly		
225	230	235
Thr Val Ile Ala Val Thr His Asp Arg Tyr Phe Leu Asp His Val Ala		
245	250	255
Gly Trp Ile Leu Glu Leu Asp Arg Gly Glu Gly Ile Pro Trp Lys Gly		
260	265	270
Asn Tyr Ser Ser Trp Leu Glu Gln Lys Thr Lys Arg Met Glu Met Glu		
275	280	285
Glu Lys Thr Ala Ser Lys Arg Arg Lys Thr Leu Glu Arg Glu Leu Glu		
290	295	300
Trp Val Arg Met Ala Pro Lys Ala Arg Gln Ala Lys Gly Lys Ala Arg		
305	310	315
Leu Asn Ser Tyr Asp Lys Leu Leu Asn Glu Asp Val Lys Glu Lys Glu		
325	330	335
Glu Lys Leu Glu Ile Phe Ile Pro Asn Gly Pro Arg Leu Gly Asn Lys		
340	345	350
Val Ile Glu Ala Lys His Val Ala Lys Ala Tyr Gly Asp Lys Leu Leu		
355	360	365
Phe Asp Asp Leu Asn Phe Met Leu Pro Pro Asn Gly Ile Val Gly Val		
370	375	380
Ile Gly Pro Asn Gly Ala Gly Lys Thr Thr Leu Phe Arg Leu Ile Met		
385	390	395
Gly Leu Glu Thr Val Asp Lys Gly Glu Phe Glu Val Gly Glu Thr Val		
405	410	415
Lys Val Ala Tyr Val Asp Gln Gln His Lys Asp Ile Asp Pro Asn Lys		
420	425	430
Ser Val Tyr Gln Val Ile Ser Gly Gly Asn Asp Leu Ile Arg Met Gly		
435	440	445
Gly Arg Asp Ile Asn Ala Arg Ala Tyr Leu Ser Arg Phe Asn Phe Ser		
450	455	460
Gly Ala Asp Gln Glu Lys Leu Cys Gly Val Leu Ser Gly Gly Glu Arg		
465	470	475
Asn Arg Leu His Leu Ala Met Ala Leu Lys Glu Glu Gly Asn Val Leu		
485	490	495
Leu Leu Asp Glu Pro Thr Asn Asp Ile Asp Val Asn Thr Leu Arg Ala		
500	505	510
Leu Glu Glu Gly Leu Glu Asp Phe Ala Gly Cys Ala Val Val Ile Ser		
515	520	525
His Asp Arg Trp Phe Leu Asp Arg Ile Cys Thr His Ile Leu Ala Phe		
530	535	540
Glu Gly Asp Ser Asn Val Phe Tyr Phe Glu Gly Ser Tyr Ser Glu Tyr		
545	550	555
Glu Glu Asn Lys Leu Lys Arg Leu Gly Asn Glu Glu Pro Lys Arg Val		
565	570	575
Arg Tyr Arg Lys Leu Ile Ala Asp		
580		

<210> 7662

<211> 306

<212> PRT

<213> B.fragilis

<400> 7662

Lys Arg Ile Lys Gly Ser Ser Gln Thr Ser Met Lys Gln Ile Pro Pro

1 5 10 15
 Leu Ile Ser Phe Ile Thr Ile Cys Tyr Asn Gly Leu Asp Asp Thr Cys
 20 25 30
 Val Leu Ile Glu Ser Leu Arg Asp Thr Ile Ser Ser Val Ser Tyr Glu
 35 40 45
 Ile Ile Val Val Asp Asn Ala Ser Arg Gln Asp Glu Ala Ser Leu Ile
 50 55 60
 Gln Glu Arg Tyr Pro Phe Val Arg Thr Leu Arg Ser Glu Lys Asn Leu
 65 70 75 80
 Gly Phe Ser Gly Gly Asn Asn Leu Gly Ile Gln Ile Ala Gln Gly Lys
 85 90 95
 Tyr Leu Phe Leu Ile Asn Asn Asp Thr Tyr Leu Thr Glu Asp Gly Leu
 100 105 110
 Pro Ala Leu Ile Glu Arg Leu Glu Ser Asp Pro Arg Ile Gly Ala Val
 115 120 125
 Ser Pro Lys Ile Arg Phe Ala Phe Pro Pro Gln Asn Ile Gln Phe Ala
 130 135 140
 Gly Tyr Thr Lys Leu Ser Arg Tyr Thr Met Arg Asn Lys Ala Leu Gly
 145 150 155 160
 Met Gly Cys Pro Asp Asp Gly Thr Phe Asp Thr Pro Arg Pro Ser Ala
 165 170 175
 Tyr Leu His Gly Ala Ala Leu Met Leu Lys Arg Glu Val Ile Trp Lys
 180 185 190
 Ala Gly Leu Met Pro Glu Ile Tyr Phe Leu Tyr Tyr Glu Glu Leu Asp
 195 200 205
 Trp Cys Thr Asn Met Thr Arg Ala Gly Tyr Gln Leu Trp Tyr Glu Pro
 210 215 220
 Arg Cys Thr Ile Phe His Lys Glu Ser Gln Ser Thr Gly Arg Gln Ser
 225 230 235 240
 Pro Leu Arg Thr Phe Tyr Met Met Arg Asn Arg Met Leu Tyr Ala Trp
 245 250 255
 Arg Asn Leu Pro Gly Met Glu Arg Cys Leu Ala Ile Ala Tyr Gln Met
 260 265 270
 Leu Ile Val Ala Pro Lys Asp Ser Leu Cys Phe Val Leu Lys Gly Glu
 275 280 285
 Pro Lys Leu Ala Lys Ala Val Trp His Gly Val Lys Gly Phe Trp Lys
 290 295 300
 Leu Cys
 305

<210> 7663

<211> 152

<212> PRT

<213> B.fragilis

<400> 7663

Arg Lys Gln Lys Asn Ser Asp Gly His Gln Ile Asn Lys Asn Ile Arg
 1 5 10 15
 Trp Met Gln Thr Tyr Leu Tyr Leu His Lys Glu Asn Ile Asp Leu Pro
 20 25 30
 His Gly Val Tyr Arg Gly Lys Tyr Pro Leu Lys His Phe Asp Tyr Gly
 35 40 45
 Leu Ser Arg Asn Val Gly Arg Lys Gly Glu Ile Thr Ser Gly Val Cys
 50 55 60
 Gly Gly Glu Ile Arg Ile Val Ile Asp Gly Phe Ala Asp Ala Thr Leu
 65 70 75 80
 Leu Gly Trp Leu Phe Asp Thr Phe Arg Lys Glu Asp Gly Ala Ile Val
 85 90 95
 Thr Leu Asp Glu His Glu Thr Thr Phe Ala Lys Leu Gln Phe Ser Gly

	100		105		110										
Ala	Ser	Val	Arg	Ser	Tyr	Arg	Met	Asn	Tyr	Asp	Ser	Arg	Val	Lys	Lys
	115					120						125			
Gly	Val	Val	Thr	Ile	Ile	Val	Ile	Glu	Ala	Lys	Glu	Ile	Val	Thr	Asp
	130					135						140			
Asn	Asp	Leu	Phe	Phe	Lys	Asn	Lys								
145					150										

<210> 7664
 <211> 389
 <212> PRT
 <213> B.fragilis

<400> 7664

Glu	Tyr	Lys	Asn	Lys	Thr	Thr	Tyr	Tyr	Met	Ala	Lys	Lys	Asn	Leu	Val
1				5					10					15	
Asn	Trp	Ser	Asp	Cys	Met	Pro	Leu	Ser	Ala	Ala	Ile	Phe	Asn	Gln	His
			20					25					30		
Asp	Asp	Tyr	Phe	Leu	Asp	Ser	Ile	Arg	Asp	Ser	Ile	Glu	Val	Arg	Thr
		35					40					45			
Asn	Ser	Tyr	Asn	Tyr	Gly	Leu	Leu	Pro	Ala	Arg	Gln	Asn	Arg	Asp	Gly
	50					55					60				
Glu	Asn	Gly	Ile	Arg	Ile	Ser	Gln	His	Val	Thr	Gly	His	Ile	Glu	Val
65					70					75					80
Arg	Leu	Lys	Ser	Cys	Glu	Ala	Ile	Thr	Ser	Ser	Gly	Ile	Arg	Ile	Gln
				85					90					95	
Phe	Asp	Ala	Thr	Glu	Thr	Gly	Ser	Glu	Leu	Val	Lys	Asn	Tyr	Ser	Val
			100					105					110		
Glu	Ser	Asp	Thr	Arg	Lys	Asn	Ile	Thr	Gln	Trp	Asp	Ile	Ile	Leu	Ser
		115					120					125			
Val	Asp	Pro	Phe	His	Arg	Val	Gly	Ser	Gly	Asp	Pro	Asn	Pro	Glu	Glu
	130					135					140				
Val	Pro	Pro	Arg	His	Pro	Asn	Ala	Leu	Pro	Ser	Tyr	Arg	Leu	Phe	Val
145					150					155					160
Met	Pro	Lys	Gly	Glu	Ile	Asn	Val	Ser	Glu	Leu	Gly	Ala	His	Tyr	Leu
			165						170					175	
Thr	Ile	Gly	Arg	Ile	Arg	Lys	Asp	Ala	Glu	Arg	Phe	Met	Val	Asp	Ala
			180					185					190		
Asp	Phe	Ile	Pro	Pro	Cys	Thr	Thr	Met	Lys	Ser	His	Pro	Glu	Leu	Gln
		195					200					205			
Glu	Tyr	His	Ala	Lys	Phe	Gly	Asn	Met	Phe	Arg	Ser	Leu	Glu	Asn	Tyr
	210					215					220				
Ser	Lys	Ile	Ile	Ile	Ala	Lys	Ile	His	Asn	Arg	Asp	Asn	Arg	Gly	Glu
225					230					235					240
Leu	Gly	Ala	His	Ile	Ser	Leu	Ile	Cys	Arg	Glu	Met	Leu	Arg	Tyr	Leu
				245					250					255	
Ala	Thr	Leu	Gln	Phe	Thr	Tyr	Thr	Asn	Lys	Gly	Leu	Tyr	Asn	Ala	Pro
			260					265					270		
Ile	Asp	Val	Leu	Glu	Ala	Val	Ser	Ser	Leu	Ala	His	Ile	Met	Tyr	Val
	275						280					285			
Ser	Phe	Ser	Tyr	Leu	Ser	Gly	Thr	Gln	Lys	Glu	Glu	Thr	Gln	Lys	Tyr
	290					295					300				
Phe	Tyr	Glu	Trp	Ser	Asp	Val	Thr	Pro	Gly	Ser	Phe	Asp	Glu	Gln	Leu
305					310					315					320
Ala	Asp	Thr	Leu	Glu	Met	Leu	Tyr	Glu	His	Thr	Asp	Ile	Arg	Ala	Ser
				325					330					335	
Met	Val	Arg	Ala	Tyr	Ser	Phe	Met	Tyr	Thr	Leu	Thr	Glu	Leu	Trp	Gln
			340					345					350		
Arg	Leu	Ser	Thr	Leu	Glu	Tyr	Ile	Gly	Gln	His	Lys	Glu	Asn	Ile	Val

355 360 365
 Val Ser Glu Arg Thr Thr Gly Asn Asn Thr Thr Gly Gln Asn Lys Thr
 370 375 380
 Trp Ser Ile Met Asp
 385

<210> 7665
 <211> 408
 <212> PRT
 <213> B.fragilis

<400> 7665

Pro Ile Met Asn Asn Thr Ile Thr Thr Trp Leu Glu Ile Leu Phe Trp
 1 5 10 15
 Leu Ser Leu Phe Leu Val Phe Tyr Thr His Leu Gly Tyr Gly Ile Leu
 20 25 30
 Leu Tyr Met Leu Val Lys Leu Lys Glu Leu Phe Val Lys Pro Val Arg
 35 40 45
 Arg Gln Leu Pro Pro Asp Lys Arg Leu Pro Asp Val Thr Leu Phe Ile
 50 55 60
 Thr Ala Phe Asn Glu Glu Glu Val Val Asp Glu Lys Met Arg Asn Cys
 65 70 75 80
 Leu Gly Leu Asp Tyr Pro Ala Asp Lys Leu His Ile Val Trp Thr Thr
 85 90 95
 Asp Gly Ser Asn Asp Ser Thr Asn Gln Arg Leu Glu Asp Trp Pro Gln
 100 105 110
 Ala Thr Val His Phe Gln Pro Leu Arg Gln Gly Lys Thr Ala Ala Met
 115 120 125
 Thr Arg Gly Met Met Leu Val Asp Thr Pro Leu Val Val Phe Thr Asp
 130 135 140
 Ala Asn Thr Met Leu Asn Arg Glu Ala Ile Arg Glu Ile Val Arg Ala
 145 150 155 160
 Phe Glu Asp Pro Lys Val Gly Cys Val Ala Gly Glu Lys Arg Ile Ala
 165 170 175
 Val Gln Glu Lys Asp Gly Ala Ala Ala Gly Gly Glu Gly Ile Tyr Trp
 180 185 190
 Lys Tyr Glu Ser Thr Leu Lys Ala Leu Asp Ala Arg Leu Tyr Ser Ala
 195 200 205
 Val Gly Ala Ala Gly Glu Leu Phe Ala Val Arg Arg Glu Leu Phe Thr
 210 215 220
 Val Met Glu Pro Asp Thr Leu Leu Asp Asp Phe Ile Leu Ser Leu Arg
 225 230 235 240
 Ile Ala Met Gln Gly Tyr Lys Ile Ala Tyr Cys Thr Gln Ala Tyr Ala
 245 250 255
 Ile Glu Ser Gly Ser Ala Asp Met Arg Glu Glu Gln Lys Arg Lys Val
 260 265 270
 Arg Ile Ala Ala Gly Gly Leu Gln Ser Ile Trp Arg Leu Arg Glu Leu
 275 280 285
 Leu Asn Pro Phe Arg Tyr Gly Val Leu Thr Phe Gln Tyr Val Ser His
 290 295 300
 Arg Val Leu Arg Trp Ser Leu Ala Pro Val Leu Leu Phe Ala Leu Leu
 305 310 315 320
 Pro Leu Asn Ile Ala Ile Leu Leu Ala Gly Gly Ser Pro Val Cys Tyr
 325 330 335
 Gly Thr Ile Leu Ala Leu Gln Leu Leu Phe Tyr Ile Met Gly Gly Trp
 340 345 350
 Gly Tyr Tyr Leu Ser Thr Arg Gln Val Lys Asn Lys Leu Leu Phe Ile
 355 360 365
 Pro Tyr Tyr Phe Leu Phe Met Asn Ile Asn Val Met Lys Gly Val Asn

370 375 380
 Tyr Leu Arg Lys Lys Lys Gly Thr Gly Ala Trp Glu Lys Ala Lys Arg
 385 390 395 400
 Thr Lys Thr Glu Ser Leu Asn Gln
 405

<210> 7666
 <211> 152
 <212> PRT
 <213> B.fragilis

<400> 7666
 Met Ile Met Lys Lys Phe Leu Phe Ile Leu Thr Val Ile Thr Cys Phe
 1 5 10 15
 Phe Ala Ser Ser Val Glu Ala Arg Arg Val Arg Phe Thr Ile Pro Val
 20 25 30
 Asp Asn Ser Ile Pro Lys Val Val Thr Leu Pro Asp Ser Ser Tyr Tyr
 35 40 45
 Lys Thr Asp Glu Gly Ser His Leu Asp Leu Gly Tyr Ile Glu Glu Asp
 50 55 60
 Gly Lys Arg Thr Leu Val Leu Phe Ser Glu Ser Lys Pro Asp Thr Tyr
 65 70 75 80
 Tyr Asp Ile Ser Asp Glu Tyr Ala Glu Ala Ile Cys Arg Asp Leu Asn
 85 90 95
 Val Glu Glu Leu Asp Thr Leu Ile Pro Lys Pro Thr Phe Trp Asp Gln
 100 105 110
 Trp Gly Gly Ser Ile Leu Phe Tyr Gly Ile Ala Ala Leu Val Val Ile
 115 120 125
 Gly Val Val Ser Tyr Leu Lys Asp Phe Ile Phe Asn Leu Leu Gly Leu
 130 135 140
 Ser Lys Lys Lys Glu Glu Glu Glu
 145 150

<210> 7667
 <211> 150
 <212> PRT
 <213> B.fragilis

<400> 7667
 Ile Leu Trp Lys Met Lys Gln Lys Tyr Tyr Lys Leu Pro Val Arg Leu
 1 5 10 15
 Glu Lys Leu Phe Glu Gly Asp Ile Arg Gln Leu Glu Arg Cys Ser Glu
 20 25 30
 Leu Glu Ser Ile Asp Gln His Ile Glu Leu Leu Leu Thr Thr Cys Pro
 35 40 45
 Gly Glu His Arg Phe Asp Pro Lys Tyr Gly Cys Arg Ile Trp Glu Leu
 50 55 60
 Asp Phe Glu Arg Ile Val Ser Thr Glu Gln Trp Lys Glu Leu Phe Thr
 65 70 75 80
 Gly Tyr Val Met Gln Ala Ile Ser Thr Tyr Glu Lys Arg Ile Ser Asp
 85 90 95
 Ile Thr Leu Ser Val Asn Leu Gln Glu Val Val Arg Glu Glu Val Leu
 100 105 110
 Asp Asn Arg Met Ile Arg Lys Arg Val Asp Ile Thr Val Leu Ala Thr
 115 120 125
 Leu Asn Ser Thr Gly Ala Pro Cys Gly Phe Gly Tyr Lys Leu Tyr Met
 130 135 140
 Gly Pro Leu Ser Asn Glu
 145 150

<210> 7668
 <211> 132
 <212> PRT
 <213> B.fragilis

<400> 7668

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Leu Ile Asn Asp Asn Ser Met Asp Lys Asp Ile Ile Val Ala Glu Asp
1      5      10      15
Glu Asp Val Lys Ile Ile Phe His Phe Lys Val Phe Cys Glu Leu Leu
20      25      30
Lys Glu Cys Met Ser Ile Tyr Gly Asn Thr Thr Ile Glu Asn Ala Gln
35      40      45
Gln Leu Val Lys Asn Phe His Pro Leu Gln Gln Pro Ile Ser Thr Thr
50      55      60
Asp Asp Ile Val Phe Phe Ser His Glu Asn Ile Tyr His Trp Ala Met
65      70      75      80
Leu Ala Leu Tyr Gly Glu Thr Tyr Trp Leu Ile His Pro Glu Cys Glu
85      90      95
Lys Leu Pro Asp Ser Tyr Glu Lys Trp Val Glu Asn Ala Leu Ser Arg
100     105     110
His Ser Leu Asp Asp Cys Tyr Glu Phe Met Ser Lys Asn Asn Asn Val
115     120     125
Thr Asn Lys Ala
130

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<210> 7669
 <211> 437
 <212> PRT
 <213> B.fragilis

<400> 7669

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Asp Ser Ala Glu Met Ile Leu Cys Val Ile Cys Gly Glu Pro Gln Leu
1      5      10      15
Asn Arg Phe Thr Gln Ile Tyr Arg Pro Ile Thr Tyr Ile Lys Thr Tyr
20      25      30
Asp Thr His Leu Ser Leu Val Asp Trp Ile Leu Phe Val Pro Leu Ala
35      40      45
Leu Cys Val Ala Tyr Leu Leu Val Tyr Ala Ile Ala Ser Lys Phe Tyr
50      55      60
Arg Ala Pro His Tyr Pro Glu Ala Asp Lys Leu His Arg Ile Ala Val
65      70      75      80
Phe Phe Pro Ala Tyr Arg Glu Asp Lys Val Ile Ile Asp Ser Val Arg
85      90      95
Ser Phe Leu Glu Gln Asp Tyr Pro Lys Glu Met Tyr Asp Val Tyr Val
100     105     110
Ile Ser Asp His Met Gln Asp Ser Thr Asn Lys Ala Leu Ser Arg Leu
115     120     125
Pro Ile Arg Leu Leu Val Ala Thr Tyr Glu Asp Ser Ser Lys Ala Lys
130     135     140
Ala Leu Leu Leu Ala Ile Ser Thr Ile Glu Glu Asp Gly Lys Ala Lys
145     150     155     160
Gly Leu Gly Asn Arg Gln Leu Ala Phe Met Tyr Asp Ile Ala Val Val
165     170     175
Met Asp Ala Asp Asn Val Thr Val Pro Gly Phe Leu Ser Glu Val Asn
180     185     190
Arg Ala Tyr Ser Ala Gly Val Gln Ala Met Gln Ala His Arg Thr Gly
195     200     205
Lys Asn Leu Asn Thr Asp Ile Ala Leu Leu Asp Gly Val Ser Glu Glu

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210		215		220
Ile Asn Asn Gly Phe	Phe Arg Ser Gly His	Asn Ala Leu Gly Leu Ser		
225	230	235		240
Ala Gly Leu Ala Gly	Ser Gly Met Ala Phe	Asp Tyr Phe Trp Tyr Tyr		
	245	250		255
Asp Ala Val Gln Ser	Leu Glu Thr Ala Gly	Glu Asp Lys Glu Leu Glu		
	260	265		270
Leu Thr Leu Leu Glu	Cys Gly Met His Thr	Val Tyr Leu Glu His Leu		
	275	280		285
Pro Val Tyr Asp Glu	Lys Thr Gln Lys Lys	Glu Asn Ile Lys Asn Gln		
	290	295		300
Arg Arg Arg Trp Met	Ala Ala Gln Phe Gly	Ile Leu Cys Glu Gly Leu		
305	310	315		320
Ser Phe Ile Lys Ser	Val Lys Gln Met Glu	Gly Trp Trp Arg Trp Trp		
	325	330		335
Pro Ser Phe Asp Leu	Val Asp Lys Ile Ile	Gln Trp Met Leu Pro Pro		
	340	345		350
Arg Leu Val Gln Leu	Val Ala Val Phe Gly	Phe Thr Leu Leu Ala Thr		
	355	360		365
Leu Val Tyr Arg Pro	Ala Ala Ser Lys Trp	Trp Ile Leu Ser Val Ala		
	370	375		380
Gln Val Ala Ala Met	Phe Ile Pro Val Pro	Ala Arg Leu Leu Asn Gly		
385	390	395		400
Arg Leu Leu Lys Ala	Leu Met Gln Val Pro	Ser Leu Ala Leu Gly Thr		
	405	410		415
Ile Ala Ser Leu Phe	His Leu Lys Gly Ala	Asn Lys Lys Phe Ile His		
	420	425		430
Thr Glu His Gly Glu				
	435			

<210> 7670
 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 7670
Glu Glu Lys Leu Gly Lys Thr Tyr Lys Thr Ile Gln Asp Lys Lys Gly
1 5 10 15
Gln Asp Lys Thr Glu Thr Ile Glu Lys Lys Arg Lys Pro Ala Asp Val
20 25 30
Pro Ala Ala Val Val Ala Ala Thr Ile Gly Met Ala Glu Val Ser Gly
35 40 45
Ile Ala Asn Ala Pro Ile Ala Ala Phe Ala Val Pro Ala Ala Pro Ser
50 55 60
Ser Gly Arg Arg Lys Gly Tyr Phe Arg Tyr Val Arg Met Arg Val Gly
65 70 75 80
Arg His Trp Trp Thr Lys Tyr Lys Pro Thr Val Ser Gly
85 90

<210> 7671
 <211> 100
 <212> PRT
 <213> B.fragilis

<400> 7671
Ser Lys His Cys Pro Val Ile Asn Val Phe Val Arg Lys Glu Asn Asn
1 5 10 15
Ile Ile Ser Ser Ala Tyr Trp Leu Leu Glu Arg Met Lys Val Phe Asn
20 25 30

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<210> 7672
<211> 467
<212> PRT
<213> B.fragilis
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Arg 1	Lys	Ala	Cys	Leu 5	Thr	Gly	Lys	Arg	Thr 10	Val	Glu	Arg	Ser	Arg 15	Lys
Ile	Leu	Thr	Met 20	Thr	Met	Met	Asn	Asp 25	Glu	Leu	Gln	Lys	Lys 30	Arg	Asp
Pro	Asp	Gln	Ser	Glu	Ile	Ala	Phe 40	Tyr	Leu	Leu	Phe	Ser 45	Val	Gln	Leu
Val 50	Leu	Ile	Ala	Ile	Gly	Ile 55	Phe	Val	Pro	Ile	Arg 60	Met	Gly	Val	Thr
Thr 65	Leu	Pro	Leu	Val 70	Ile	Ala	Leu	Ser	Met 75	Ile	Thr	Leu	Met	Arg 80	Cys
Thr	Gly	Gln	Glu 85	Thr	Asp	Trp	Lys	Arg	Gly 90	Gln	Asn	Val	Met 95	Phe	Gly
Leu	Phe	Met	Val 100	Trp	Gly	Ala	Tyr	Cys 105	Leu	Phe	Glu	Ile 110	Gly	Asn	Pro
Asn	His 115	Val	Gln	Ala	Ala	Trp	Asn 120	Ile	Ala	Ile	Thr	His 125	Tyr	Trp	Val
Tyr	Pro 130	Leu	Val	Phe	Ala	Phe 135	Val	Val	Pro	Leu	Ala 140	Ile	Arg	Asn	Tyr
Lys 145	Gly	Ile	Glu	Trp	Leu 150	Leu	Leu	Ile	Trp	Ser 155	Val	Phe	Val	Leu 160	Ile
Ala	Ala	Phe	Lys 165	Gly	Tyr	Trp	Gln	Lys	Ser 170	His	Gly	Phe	Asn 175	Ala	Lys
Glu	Leu	Tyr	Phe 180	Leu	Tyr	Thr	Leu	Gly 185	Gly	Tyr	Arg	Thr 190	His	Leu	Ile
Trp	Ser 195	Gly	Ile	Arg	Tyr	Phe	Ser 200	Cys	Phe	Pro	Asp 205	Ala	Ala	Asn	Phe
Gly	Val 210	His	Ser	Ala	Met	Ala 215	Val	Thr	Thr	Phe 220	Gly	Ile	Ala	Thr	Phe
Tyr 225	Val	Arg	Lys	Arg	Trp 230	Met	Lys	Val	Tyr	Phe 235	Ala	Ile	Ile	Ala	Ile
Cys	Ala	Ile	Tyr 245	Gly	Met	Gly	Ile	Ser	Gly 250	Thr	Arg	Ala 255	Ala	Met	Ala
Val	Pro	Phe	Gly 260	Gly	Ile	Ala	Leu	Phe 265	Ile	Leu	Val	Ser 270	Lys	Ser	Trp
Lys	Ser 275	Phe	Ala	Phe	Ser	Thr 280	Leu	Ala	Phe	Ile	Ala 285	Val	Phe	Ser	Phe
Phe	Asn 290	Phe	Thr	Thr	Ile	Gly 295	Asp	Gly	Asn	Gln	Tyr 300	Ile	Arg	Lys	Met
Arg 305	Ser	Ala	Phe	Arg	Pro 310	Ser	Glu	Asp	Ala	Ser 315	Tyr	Gln	Val	Arg	Val
Glu	Asn	Arg	Lys 325	Lys	Met	Lys	Gly	Leu	Met 330	Asp	Glu	Lys 335	Pro	Ile	Gly

[illegible]